



Arto Aniluoto

'AT ONCE SO UNIFORM AND SO DIVERSE'

A Comparative Study of the Organisational
Structures of Well-Established European
Universities from 1962 to 2013



University of Helsinki
Faculty of Social Sciences

‘AT ONCE SO UNIFORM AND SO DIVERSE’

A COMPARATIVE STUDY OF THE ORGANISATIONAL
STRUCTURES OF WELL-ESTABLISHED EUROPEAN
UNIVERSITIES FROM 1962 TO 2013

Arto Aniluoto

ACADEMIC DOCTORAL DISSERTATION

To be presented for public discussion, with the permission of the Faculty of Social Sciences of the University of Helsinki, in Unioninkatu 33 Banquet Room, on the 18th of December, 2020 at 13 o'clock.

Helsinki 2020

Publications of the Faculty of Social Sciences 176 (2020)

Political Science / Research into Higher Education

Doctoral Programme in Political, Societal and Regional Changes (PYAM)

Dissertation supervisors: Turo Virtanen & Pertti Ahonen

Opponent and preliminary examiner: Elias Pekkola, Tampere University

Second preliminary examiner: Lars Geschwind, KTH Royal Institute of Technology

The Faculty of Social Sciences uses the Urkund system (plagiarism recognition) to examine all doctoral dissertations.

Copyright © ArtoAniluoto 2020

Cover picture by T. Uwins & J. Agar, from the *History of Oxford* by R. Ackermann, October 1st, 1814.

The picture of a head part of an Oxonian university procession also depicts both academic uniformity and diversity at the same time: a Verger, Yeoman Beadle, Esquire Beadle and the Vice Chancellor are simultaneously uniformly dressed and are still carrying and/or wearing also the individual symbols of their offices.

Distribution and Sales:

Unigrafia Bookstore

<http://kirjakauppa.unigrafia.fi/>

books@unigrafia.fi

ISSN 2343-273X (Print)

ISSN 2343-2748 (Online)

ISBN 978-951-51-6321-9 (Paperback)

ISBN 978-951-51-6322-6 (PDF)

Unigrafia

Helsinki 2020

Abstract

The research is a comparative study of the formal organisational structures of well-established European universities. Even as the contemporary scholarly discussion on the convergence versus divergence claims of universities has become intense, so far it has not reached the actual empirical change dynamics of the universities' organisational structures at the population level. Thus, the structural developments and change processes that occurred within historically formed university organisations mostly remain uncharted. The research contributes to that discussion by studying the long-term development and evolution in the organisational structures of a large sample of well-established European universities. The work also clarifies the evolution of the historical university models (from their medieval beginnings, through strong 19th century national influences, to their 20th century national Higher Education System adaptations), through which both the organisational structures of contemporary universities and the higher education systems of European countries have been born, replicated and developed. The research belongs to the field of higher education research, with certain reliance also on university history.

The work utilises Mintzberg's 'structures in fives' middle-range theory, and organisational ecology on the population level, within the larger theoretical framework of structural contingency theory. *The research problem is to chart how the organisational structures of well-established European universities have developed since the Second World War and in relation to the convergence and divergence claims. This is achieved by comparing the universities' organisational structures, their units and organisation levels, configuration sizes, shapes, dispersal and differentiation as Mintzbergian representations of their professional organisation, other attributes and their affiliations with both the historical university models and the universities as organisational populations of the wider higher education systems level.* The research utilises a particular version of the comparative method, the so-called organic contextual comparison with juxtaposition. Information from international longitudinal series publication and digital database sources has been used as the primary data, comprising the organisational configurations of 106 European universities over a 50-year study period from 1962 to 2013 with intervals of about a decade.

The results demonstrate in detail how *the European universities of the data as a population of organisational forms have within the study period differentiated and multiplied many times over, both as institutions and within their internal organisational structures.* In the 21st century, the rate of change has accelerated and the effects of change on structures have differentiated, for instance leading to new

types of campus and above-faculty layers and reforms in the organisational structures. Even as the size and the dispersal of organisation structures of universities mostly go hand in hand, an organisation's size itself does not necessitate any minimum or maximum number of organisational unit structures. The universities affiliated with different historical university models have different forms of organisational structures and configuration shapes. In reforms, it is more common to adjust unit terminology and regroup existing structures than to formulate new units with mixed disciplinary identities, which would create a more fundamental reform. The research also develops concepts related to the universities' reforms, mergers and divisions further towards an improved empirical applicability. *The convergence versus divergence discussion of universities is clarified by consciously parsing the claimed phenomena to the three organisational levels of higher education, which are the meso level of local higher education institutions (HEIs), the macro level of mostly national higher education systems (HESs) and the global higher education network (GHEN) level. Both convergence and divergence of organisational structures can be found, but they are exhibited at different levels and occur in different ways without straightforward regularities.* The analyses of the observed developments with the contingent factors would open up new topics for further study. The results of the research could be utilised in practice by consciously choosing from a greater set of compared structural alternatives when designing university reforms and new university organisations in the future.

Keywords: universities, organisations, organisation structure, organisational change, reform, merger, university history, university models, higher education systems, higher education institutions, contingency, convergence, divergence, Europe.

Tiivistelmä

Tämä on vertaileva tutkimus vakiintuneiden ja tunnustettujen eurooppalaisten yliopistojen virallisista organisaatorakenteista. Vaikka ajankohtainen tutkimuksellinen keskustelu yliopistojen konvergoitumisesta ja divergoitumisesta käy kiivaana, se ei toistaiseksi ole kunnolla päässyt empiirisesti kiinni yliopistojen organisaatorakenteiden varsinaiseen muutosdynamiikkaan niiden populaatiotasolla. Tämän vuoksi toteutuneet rakenteelliset kehityskulut sekä muutosprosessit historiallisesti muotoutuneissa yliopisto-organisaatioissa ovat jääneet enimmäkseen kartoittamatta. Tutkimus osallistuu omalta osaltaan mainittuun keskusteluun tutkimalla pitkällä aikavälillä organisaatorakenteissa toteutunutta kehitystä suuressa joukossa vakiintuneita ja tunnustettuja eurooppalaisia yliopistoja. Työ myös jäsentää niiden historiallisten yliopistomallien (edeten keskiaikaisista juurista 1800-luvun vahvojen kansallisvaltiovaikutteiden kautta 1900-luvun kansallisiin korkeakoulujärjestelmäsovelluksiin) evoluutiota, jonka kautta sekä nykyajan yliopistojen organisaatorakenteet että Euroopan maiden kansalliset korkeakoulujärjestelmät ovat syntyneet, kopioituneet ja kehittyneet. Tutkimus kuuluu korkeakoulututkimuksen alaan tukeutuen osittain myös yliopistohistorian tutkimukseen.

Työssä käytetään Mintzbergin “rakenteet viitenä” (structures in fives) -nimistä organisaatioteoriaa ja organisaatioekologiaa populaatiotasolla yhdistettynä rakenteellisen kontingenssiteorian kanssa laajempaan viitekehykseen. *Tutkimusongelmana on kartoittaa, kuinka vakiintuneiden ja tunnustettujen eurooppalaisten yliopistojen organisaatorakenteet ovat kehittyneet toisen maailmansodan jälkeen ja suhteessa konvergoitumis- ja divergoitumisväitteisiin. Tämä tehdään vertailemalla yliopistojen organisaatorakenteita, niiden yksiköitä ja organisaatiotasoja, konfiguraatioiden kokoa, muotoa, dispersiota ja differentoitumista mintzbergiläisinä kuvauksina niiden professionaalisesta organisaatiosta, ja niiden muita ominaisuuksia ja kytköksiä sekä historiallisiin yliopistomalleihin että yliopistoja laajemman kansallisten korkeakoulujärjestelmien tason organisaatiopopulaationa.* Tutkimus hyödyntää vertailevan menetelmän erityistä sovellusta, niin sanottua orgaanista ja kontekstuaalista rinnastavaa vertailua. Työssä hyödynnetään pääasiallisena aineistona kansainvälistä aikasarjajulkaisu- sekä tietokanta-aineistoa, joka käsittää tiedot 106 eurooppalaisen yliopiston organisaation konfiguraatiokokoonpanosta 50 vuoden aikajaksolta noin vuosikymmenen aikavälein vuodesta 1962 vuoteen 2013.

Tutkimuksen tulokset osoittavat yksityiskohtaisesti, kuinka aineiston *eurooppalaiset yliopistot organisaatiomuotojen populaationa ovat tutkimusjakson aikana erilaistuneet ja kooltaan*

moninkertaistuneet sekä instituutioina että sisäisten organisaatorakenteidensa osalta. 2000-luvulla muutosnopeus on kiihtynyt ja muutoksen vaikutukset rakenteisiin ovat erilaistuneet, esimerkiksi uudentyypipisten, tiedekuntien yläpuolelle luotujen kampus- ja muiden rakenteiden sekä reformien myötä. Vaikka yliopistojen organisaatorakenteiden koko ja yksiköiksi jakaantuminen kulkevat yleensä käsi kädessä, organisaation koko ei sinänsä edellytä mitään vähimmäis- tai enimmäismäärää organisaatioyksiköistä koostuvia rakenteita. Eri historiallisiin yliopistomalleihin kytköksissä olevilla yliopistoilla on erilaiset tyypilliset organisaatorakenteet ja konfiguraatiomuodot. Organisaatioreformeissa useammin muutetaan yksikkönimityksiä ja ryhmitellään olemassa olevia rakenteita uudelleen kuin muodostetaan uusia yksiköitä tieteenalojen identiteettejä sekoittamalla, vaikka jälkimmäinen tapa voisi tuottaa perustavanlaatuisempia muutoksia. Tutkimus myös kehittää yliopistojen organisaatiomuutoksiin, fuusioihin ja jakautumisiin liittyviä käsitteitä kohti niiden parempaa empiiristä sovellettavuutta. Yliopistojen konvergoitumis- ja divergoitumiskeskustelu selkiytyy, kun siihen väitetyksi liittyvät ilmiöt jäsennetään tietoisemmin korkeakoulutuksen kolmelle eri organisatoriselle tasolle, jotka ovat paikallisten korkeakoulujen (HEI) mesotaso, enimmäkseen kansallisten korkeakoulujärjestelmien (HES) makrotaso ja globaalisti verkostoituneen korkeakoulutuksen (GHEN) taso. Organisaatorakenteiden sekä konvergenssia että divergenssiä löytyy, mutta ne esiintyvät keskenään eri tasoilla ja tapahtuvat toisistaan poikkeavin tavoin ilman yksiselitteisiä säännönmukaisuuksia. Havaittujen kehityskulkujen kontingenssitekijöitä hyödyntävät analyysit avaisivat uudenlaisia jatkotutkimusaiheita. Tutkimuksen tuloksia voitaisiin hyödyntää käytännössä valitsemalla tietoisesti suuremmasta joukosta vertailtuja rakenteellisia vaihtoehtoja tulevaisuuden yliopistouudistuksia sekä uusia yliopisto-organisaatioita suunniteltaessa.

Avainsanat: yliopistot, organisaatiot, organisaatorakenne, organisaatiomuutos, reformi, fuusio, yliopistohistoria, yliopistomallit, korkeakoulujärjestelmät, korkeakoulut, kontingenssi, konvergenssi, divergenssi, Eurooppa.

Preface and Acknowledgements

I have personally always been interested in and enticed by universities, as the most extraordinary and curious institutions they are. To quote poet John Masefield: ‘*There are few earthly things more beautiful than a university.*’ Many years of work and various responsible positions in university administration and university associations, early participation in international conferences on the subject (see Aniluoto & Henttonen 2001; Aniluoto 2003) as well as a master’s thesis on the development of initially faint co-operation into a strategic partnership between the city and the university in Helsinki (see Aniluoto 2004a; 2004b) have all created a lasting personal interest for me on all universities as organisations. The late C. Wright Mills (see Mills 2015) made me understand already during my freshman year at the university that *sociological imagination* is an ever-inspiring tool to accomplish nearly anything. In addition to wanting to promote understanding of universities and their development as organisations, I set out to undertake this research because I wanted to find practical alternatives to practical problems and the means to help the higher education reformers of the future to avoid poorly planned organisational reforms. All organisational structures are just human means to an end, and as such, should always be tailored to be used for a specific purpose. There has never been an optimal generic way to organise things and there is never going to be one – regardless of what the consultants representing the latest management fads may say – but there might be a nearly optimal way to organise for a specific use!

In the Royal Academy of Åbo (the current University of Helsinki), professor Michael Wexionius prepared the university’s first dissertation (also from the field of political science, like mine!) ever for public disputation, which was held on December 18th 1641. The dissertation (Wexionius 1642) itself was printed only about a year later in the fall of 1642, after the new university had gotten its first press facility up and running. According to Wexionius (1644, translation by myself), ‘*those states, in which universities flourish, will endure the longest!*’ and on the University itself, ‘*the Academy is a fountain of life, from which wisdom is scooped, in order to put out the fire of ignorance*’. Now at the same university, precisely (to the day!) 379 years later and after a total of ‘about’ 22388 doctoral dissertations (this being the calculated ordinal number of my defence, based on the most accurate information available at the time when this book was sent to be printed in late November 2020), I can proudly say that I can still fully agree with and wholeheartedly share these personal convictions of Wexionius. It has been a pure privilege to be able to have studied for two academic degrees in one of the finest European research universities, which in respect to the depth and richness of its academic traditions, scientific aspirations and engagement with society is second to none in Finland, and never needs to be ashamed

even amongst the great company of any of the oldest, highest-ranked and most prestigious universities in the world! The University of Helsinki and its various societies have filled my life with unforgettable experiences under the last quarter of a century and have made me both very proud and most humbled at the same time. To my dearest *Alma Mater* I can simply state: I am forever in Your debt!

I wish to offer my most sincere thanks to the many people without whom I would not have made it this far. Firstly, this project could never have seen completion without my indeed wise and patient thesis supervisor Turo Virtanen, who always kept believing in me through a whopping 16-year period and volunteered to be accessible outside normal office hours, and sometimes against his better judgement. Thank You Turo for never giving up! I am honoured, for my small part, also to crown the long academic career of my second supervisor Pertti Ahonen, who acted as the custos of my thesis defence, for the last time just a few days before his retirement from the faculty. Through the long years I have highly benefited from the wisdom of several professors (some of which are already *emeriti*) and academic teachers, and I therefore wish to thank Timo Aarrevaara, Laura Kolbe, Matti Klinge, Seppo Hölttä, Yuzhuo Cai and Jussi Kivistö (especially for critique). I deeply thank professor Lars Geschwind and university lecturer Elias Pekkola, who served as the committed pre-examiners of my thesis. Elias naturally deserves my additional gratitude for assuming the important duties of the opponent of my public defence of this thesis. I also thank professor Jeroen Huisman from Ghent University and university lecturer Pieter Dhondt from the University of Eastern Finland, who provided many truly valuable comments and critique of an earlier version of the manuscript, without which the final thesis would be a much lesser volume than it is.

My professional mentors, two former registrars and heads of administration at the University of Helsinki, Councillors of Administration Sinikka Mertano and the late Kari Suokko, opened doors and helped me in several ways not often up for grabs to most individual doctoral candidates. The sometimes checkered experience of being and working as a doctoral student I have had the privilege of sharing at least at some point during these long years with, and would therefore offer my warmest acknowledgments and thanks to Janne Wikström, Maria Pietilä, James Anyan, Sari Aalto, Eva Ahl-Waris, Anton Eskola, Tero Halonen, Ilkka Hannula, J. Tuomas Harviainen, Marleena Holmberg, Marko Ikonen, Pasi Ikonen, Hannu-Pekka Ikäheimo, Maija Jäppinen, Olga Kantokoski, Jaakko Kauko, Pekka Mattila, Johanna Moisio, Sanja Mursu, Liisa A. Mäkinen, Patrik Nordin, Joonas Paalasmaa, Auri Pakarinen, Riikka-Maria Pöllä, Elina Rydman, Walter Rydman, Vilja Rydman, Jenny Schröer, Ville Sinnemäki, Maria Svanström, Heta Tarkkala, Meng Tian, Kari Vanhatalo, Kaarlo Väisänen, Harri Waltari, Anu Yijälä and Pia Österman. I am also indebted to several other colleagues and contributors both inside and outside of our

department: Ian Dobson (especially for the language polishing of my thesis), Juhana Aunesluoma, Wilhelmina Dyster, Tero Erkkilä, Arja Haapakorpi, the late Timo Honkela, Heikki Hyhkö, Esa Hämäläinen, Tuomas Iso-Markku, Juha Jokela, Jorma Jokinen, Jukka Kola, Pasi Komulainen, Jukka Kortti, Mikko Kotola, Antti Kähkönen, Marjukka Laakso, Jarno Limnell, Hanna Lång-Mattila, Elina Lähdeniemi, Juha Merimaa, Arto Mustajoki, Ilkka Niiniluoto, Terhi Nokkala, Anu Pakkanen, Kari Raivio, Paula Ranne, Mikko Rask, Ari Salminen, Janne Sariola, Aino Sinnemäki, Kirsti Sintonen, Tuomo Tamminen, Jarkko Tirronen, Pirkko Vartiainen, Thomas Wilhelmsson and Tuomas Ylä-Anttila.

Furthermore, the continuing support and encouraging comments of several of my friends, work colleagues and relatives not belonging to the abovementioned categories have meant a great deal to me: Aino Aalste, Aku Aarva, Antti Ahonen, Minna Aitola, Varpu Aniluoto, Jussi Auvinen, Michaela Bränn, Ritva and Thomas Daly, Katherine and Richard Daly, Mikko Eskola, Anneli Ess, Hanna Hannus, Anne Hietaharju, Juuli Hilska, Juhani Huttunen, Mitka Joenpalo, Jani Johansson, Miikka Kallberg, Kai Kaksonen, Jaakko Kalske, Riitta Kauppinen, Lauri Korkeaoja, Kimmo Kääriä, John Lagerbohm, Janne Lardot, Erkki and Vuokko Lassila, Laura Lassila and the cats Edison and Hilma, Reima Launonen, Klaus Lindberg, Laura Luoto, Jari Miettinen, Elina Moisio, Totti Mäkelä, Antti Mäki, Jukka Männistö, Oskari Nokso-Koivisto, Jussi Nuortimo, Varpu Oinas, Jaakko Ollila, Inka Ora, Nina Paakkunainen, Ester Pentti, Esa Perkiö, Hugo Pipping, Joonas Pärenson, Aki and Saara Reinimäki, Rosa Salmivuori, Juha Savolainen, Maria Seppänen, Anni Siitonen, Outi Tasala, Sini Terävä, Matti Toivettula, Johanna Vesterinen, Heikki Wilenius, Kuno Öhrman and Ilkka Tuominen (personally for whom I want to assure that the miracle of graduation from the university indeed seems to be possible!).

I also wish to thank several organisations and other entities as well for their help and contribution for my work: the HEAME doctoral program, the former HEGOM research group and HEINE network, CSC – IT Center for Science, European Movement in Finland, HYY – Student Union of the University of Helsinki, Kirsi Kontula and Tomi Posa at the National Library of Finland (the most beautiful part of my *Alma Mater*), Sue Povey at WHED / Palgrave Macmillan, Nicholas Poulton and Amanda Sudic at the International Association of Universities (IAU), Nick Mulhern at the Association of Commonwealth Universities (ACU), Jacqueline Smith (formerly at OECD/IMHE), the former European commissioner for research, science and innovation Carlos Moedas, WordPerfect X5, Wikipedia, the Internet archive (archive.org) and Google Translator. I got two scholarships for this work from the *Eteläsuomalaisten ylioppilaiden säätiö (ESYS)* foundation and the *Yhteiskunta-alan korkeakoulutetut ry. (Social Science Professionals)* labour union, to which I am very grateful.

To conclude, I am deeply indebted to my simply wondrous daughter Amalia Aniluoto, without whom I would not be the joyful and content man I am today. I wish to dedicate this work for my mother Virpi Aniluoto and especially to the memory of my late grandmother Lemmikki Aniluoto, who though themselves not possessing higher education, personally encouraged me since my childhood to cultivate cultural interests and pursue education. In becoming the first-ever person in my next of kin to achieve an academic doctorate, I want to commend those without whom I would not have even ever started the path that so far has led me here. To quote John Edensor Littlewood: *'Don't be intimidated. Great knowledge often comes from the humblest of origins. Come along.'* These working-class women have shown that the Finnish equality of opportunity idea and the welfare-state model of society indeed do – or at least once used to – work well.

In my beloved native city of Helsinki and in the hem of my *Alma Mater*, originally written for the most part on the International Women's Day, 8th of March 2020, just before the Covid-19 pandemic really hit and changed us all. But this too shall pass!



Arto Juhani Aniluoto

Table of Contents

Front Matter

Abstract	iii
Tiivistelmä	v
Preface and Acknowledgements	vii
Table of Contents	xi
Appendices	xiv
List of Figures	xiv
List of Tables	xvii

The Dissertation

1 Introduction: The Organisations of Universities as a Subject of Study	1
1.1 The Research Subject: the Formal Organisation of Universities	2
1.2 The Importance of a Historical Perspective in Studying University Organisations	4
1.3 The Purpose and Outline of This Research	6
2 The Organisational Structures of Universities in Light of Theories	8
2.1 Looking for the Universities' Organisational Structures in Change	8
2.1.1 The External View: University as an Organisation versus University as an Institution	10
2.1.2 The Internal View: Organisational Structure versus the Field of Science	11
2.2 Formulating the Theoretical Framework: In Search of a Middle-range Theory	12
2.2.1 The Ecological Analogy: University Organisation as the Metaphorical 'Organism'	13
2.2.2 Structural Contingency Theory (SCT)	14
2.2.3 The Aston Studies and Its Peers	16
2.2.4 Organisational Ecology and its Application to Universities	18
2.3 Henry Mintzberg's Theory of Structures in Fives	22
2.4 The Birth, Life and Death of Universities' Organisational Structures in Theory	26
2.4.1 The Birth and Creation of Universities' Organisational Structures	27
2.4.2 The Meanings, Motivations and Consequences of Reforms in Higher Education	29
2.4.3 The Mergers and Divisions of University Organisations	30
2.4.4 University Organisations Resisting Change, Constantly Expanding and Hardly Dying	33
2.5 The Opposing Claims of Convergence and Divergence of Organisations	34

2.5.1 Isomorphism and the Convergence Claim of University Organisations and HESs	36
2.5.2 Divergence and the Diversification Claim of University Organisations and HESs	37
2.5.3 Allomorphism as an Attempt to Reconcile the Opposing Claims	39
2.5.4 The Universities' Organisational Structures in Relation to the Convergence and Divergence Claims	40
3 The Comparative Research Design and Methodological Choices	44
3.1 The Research Problem and Research Setting	47
3.1.1 The Essential Concepts and Criteria Defined for the Purpose of Comparison	49
3.1.2 The Research Problem and the Research Questions	51
3.1.3 Relevant Prior Empirical Research	52
3.2 Research Data and Analysis Methods	55
3.2.1 From an Open Mind, through Mixed Methods of Organisational Research...	58
3.2.2 ...To an Organic Contextual Comparison with Juxtaposition	61
3.2.3 Potential Limitations of the Method and Their Evaluation	65
4 An Overview of the Historical Development of the Organisational Structures of Universities	67
4.1 The Usage and Limitations of University Models as Analytical Tools	67
4.2 The Medieval University: the Models of Bologna and Paris (from 11 th to 15 th Centuries)	70
4.2.1 The Debate on the Origin of the First Universities	71
4.2.2 Earliest Organisational Developments: from <i>studium generale</i> to <i>universitas</i>	71
4.2.3 The University Model of Bologna (the Students' University)	73
4.2.4 The University Model of Paris (the Masters' University)	74
4.2.5 The Basic Building Block Corporations of Universities: Nations, Faculties and Colleges	76
4.2.6 Similarities and Differences in the Organisation of Medieval Universities	79
4.3 The Pan-European University Model (from 16 th to 18 th Century)	82
4.3.1 Expansion, Differentiation and Professionalisation of European Universities	84
4.3.2 The European University Model Spreads to the Americas	85
4.4 The Competition of National University Models (from the 19 th century until about 1945)	86
4.4.1 The National French/Napoleonic University Model	86
4.4.2 The National German/Prussian/Humboldtian University Model	88
4.4.3 The National British/Anglo-Saxon/Newmanian University Model	90
4.4.4 The National Russian and Soviet University Models	93
4.4.5 The National University Models Compared	95

4.4.6 The Application of the National University Models in Other Parts of Europe	96
4.4.7 The National German University Model Prevails and Affects All Other Models	101
4.5 The Age of ‘Transplantation’ of University Models (from about 1945 onwards)	104
4.5.1 Reforms of the Postmodern period: Tackling Massification of Higher Education	104
4.5.2 The Birth of University Management and Conscious Design of University Organisations	106
4.5.3 Emerging National Higher Education Systems	108
4.5.4 The ‘Sequel’ University Building Blocks: Departments, Institutes and Schools	109
4.5.5 Reforms within the Higher Education Systems based on the Four National Models	110
4.5.6 From Global Economic Recession Towards New Public Management in Universities	116
4.5.7 The Effects of European Integration to European Higher Education Systems	117
4.6 The Historical Filiation and Development of University Models in Europe	119
5 A Comparative Analysis of the Primary Research Data	123
5.1 Description of the Research Data and the Mintzbergian Interpretations of It	123
5.1.1 Demarcation Lines Inside and Outside the Data	126
5.1.2 The Mintzbergian Organigram Interpretation Method and the Notation Method	128
5.2 General Features of Universities’ Organisation Units and Findings on Their Categories	130
5.2.1 Findings on the Names and Statuses of Units and Their Universities	134
5.2.2 The Faculties as the Predominant and Stable Main Structure of Universities	138
5.2.3 The Departments and Institutes as the Fundamental ‘Levels Below’ Structures	142
5.2.4 The Faculty Alternatives: Colleges, Units, Sections, Schools, Seminars and Academies	148
5.2.5 The ‘Levels Below’ Alternatives: Clinics, Laboratories and Stations	159
5.2.6 The Many Faces of Centres and Research Units	164
5.2.7 The 21 st Century ‘Levels Above’: Sectors, Divisions, Groups, Areas and Campuses	168
5.2.8 The Extras: The Uncommon Unit Category Types and Beyond	171
5.2.9 General Findings on the Attributes of the Organisation Units in the Data	174
5.3 Findings on the HES Models and Their National University Model Adaptations	176
5.3.1 HES Model Findings on the Units’ Organisational Level Locations	177
5.3.2 Universities in HESs Based on the French HES Model	180
5.3.3 Universities in HESs Based on the German HES Model	187
5.3.4 Universities in HESs Based on the British HES Model	193
5.3.5 Universities in HESs Based on the Russian and Soviet HES Models	196
5.3.6 Universities in HESs Based on Amalgamated HES Models	201
5.4 Findings on the General Development and Changes of University Organisations	205

5.4.1 The Birth, Organic Growth and Unending Existence of University Organisations	205
5.4.2 Mergers, Divisions and Reforms of University Organisations in the Data	207
5.4.3 The Governing Organs and Governance Structures of the Universities in the Data	213
5.4.4 Remarks on the Data Relative to the Contingent Factors and Mintzberg's Hypotheses	216
5.5 Population Level Findings on the Development of University Organisations	220
5.5.1 Findings on the Size of the University Organisations in the Data	221
5.5.2 Findings on the Shape and Dispersal of the University Organisations in the Data	223
5.5.3 Findings on the Differentiation of the University Organisations in the Data	227
5.6 The Convergence Versus Divergence Claims at the HEI, HES and GHEN Levels	235
6 Conclusions: The Research Results and Their Importance for Theory and Practice	240
6.1 A Summary of the Essential Results and Findings	240
6.2 Discussion of the Results	245
6.3 Topics For Further Study	247
6.4 Epilogue: Final Remarks for Future University Reformers	249
References	252

Appendices

Appendix 1. An Overview of the European Universities in the Research Data	275
Appendix 2. The University Model and HES Model Categories in the Research Data	278
Appendix 3. The Organisational Configuration Unit Categories and Their Extra Specialisation Attributes in the Research Data	279
Appendix 4. The Mintzbergian Organigram Representation Drawing Method, Its Notation Method and the Analysis Notation Case Examples	281

List of Figures

Figure 1. The five basic parts of the organisation	23
Figure 2. The five basic parts' relation to the units of formal authority forming a hierarchy	23
Figure 3. The professional bureaucracy type of organisation drawn the Mintzbergian way	25
Figure 4. An example of a university-type parallel hierarchies inside the professional bureaucracy type of organisation drawn the Mintzbergian way	25
Figure 5. The organisation structure of the medieval University of Paris	75

Figure 6.	Universities active in Europe in the year 1300	80
Figure 7.	Universities active in Europe in the year 1500	82
Figure 8.	Timeline of the evolution of colleges in the University of Cambridge, in the order their students are presented for graduation	114
Figure 9.	The Schematic Family-tree of the Historical connections of the European University Models (from 11 th to 20 th Century)	122
Figure 10.	The total number of university units in the data and their organisational level (U-1, U-2 and U-3) location	132
Figure 11.	The total number of university units in the data per their unit types	133
Figure 12.	Faculties (F) in the data per their organisational level (U-1, U-2 and U-3) location	139
Figure 13.	Faculties (F) in the data per their HES model affiliation	140
Figure 14.	Departments (D) in the data per their organisational level (U-1, U-2 and U-3) location	143
Figure 15.	Departments (D) in the data per their HES model affiliation	144
Figure 16.	Institutes (I) in the data per their organisational level (U-1, U-2 and U-3) location	146
Figure 17.	Institutes (I) in the data per their HES model affiliation	147
Figure 18.	Colleges (C) in the data per their organisational level (U-1, U-2 and U-3) location	148
Figure 19.	Colleges (C) in the data per their HES model affiliation	149
Figure 20.	Units (Ut) in the data per their organisational level (U-1, U-2 and U-3) location	150
Figure 21.	Units (Ut) in the data per their HES model affiliation	151
Figure 22.	Sections (Sec) in the data per their organisational level (U-1, U-2 and U-3) location	152
Figure 23.	Sections (Sec) in the data per their HES model affiliation	153
Figure 24.	Schools (S) in the data per their organisational level (U-1, U-2 and U-3) location	154
Figure 25.	Schools (S) in the data per their HES model affiliation	155
Figure 26.	Seminars (Sem) in the data per their organisational level (U-1, U-2 and U-3) location	156
Figure 27.	Seminars (Sem) in the data per their HES model affiliation	157
Figure 28.	Academies (A) in the data per their organisational level (U-1, U-2 and U-3) location	158
Figure 29.	Academies (A) in the data per their HES model affiliation	158
Figure 30.	Clinics (Cl) in the data per their organisational level (U-1, U-2 and U-3) location	159
Figure 31.	Clinics (Cl) in the data per their HES model affiliation	160
Figure 32.	Laboratories (L) in the data per their organisational level (U-1, U-2 and U-3) location	161
Figure 33.	Laboratories (L) in the data per their HES model affiliation	162
Figure 34.	Stations (St) in the data per their organisational level (U-1, U-2 and U-3) location	162
Figure 35.	Stations (St) in the data per their HES model affiliation	163
Figure 36.	Centres (Ce) in the data per their organisational level (U-1, U-2 and U-3) location	164

Figure 37. Centres (Ce) in the data per their HES model affiliation	165
Figure 38. Research Institutes, Research Units, Research Departments and Research Centres (RI, RU, RD and RCe combined) in the data per their organisational level (U-1, U-2 and U-3) location	167
Figure 39. Research Institutes, Research Units, Research Departments and Research Centres (RI, RU, RD and RCe combined) in the data per their HES model affiliation	167
Figure 40. Sectors, Divisions, Groups, Areas and Campuses (Sr, Div, GP, Ar and Ca combined) in the data per their organisational level (U-1, U-2 and U-3) location	168
Figure 41. Sectors, Divisions, Groups, Areas and Campuses (Sr, Div, GP, Ar and Ca combined) in the data per their HES model affiliation	169
Figure 42. The Uncommon and All Non-standard Extra Unit Categories (combined) in the data per their organisational level (U-1, U-2 and U-3) location	172
Figure 43. The Uncommon and All Non-standard Extra Unit Categories (combined) in the data per their HES model affiliation	172
Figure 44. The total number of university units in the data per their HES model affiliation	176
Figure 45. The university units at level U-1 in the data per their HES model affiliation	177
Figure 46. The university units at level U-2 in the data per their HES model affiliation	179
Figure 47. The university units at level U-3 in the data per their HES model affiliation	179
Figure 48. The French HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location	180
Figure 49. The French HES model affiliated universities in the data per unit types	181
Figure 50. The German HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location	187
Figure 51. The German HES model affiliated universities in the data per unit types	188
Figure 52. The British HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location	193
Figure 53. The British HES model affiliated universities in the data per unit types	194
Figure 54. The Russian HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location	197
Figure 55. The Russian HES model affiliated universities in the data per unit types	198
Figure 56. The organisation size index averages of all the universities in data and per their HES model affiliation	222
Figure 57. The number of universities in the data per their number of organisation levels	224
Figure 58. The typology organigram shapes of Mintzbergian forms of the universities affiliated with	

each of the HES models in the data	225
Figure 59. The unit dispersal index averages of all the universities in data and per their HES model affiliation	226
Figure 60. The University population of the data in 1962 placed according to their relative organisational size and unit dispersal positions	228
Figure 61. The University population of the data in 1974 placed according to their relative organisational size and unit dispersal positions	229
Figure 62. The University population of the data in 1983 placed according to their relative organisational size and unit dispersal positions	230
Figure 63. The University population of the data in 1993 placed according to their relative organisational size and unit dispersal positions	231
Figure 64. The University population of the data in 2003 placed according to their relative organisational size and unit dispersal positions	232
Figure 65. The University population of the data in 2013 placed according to their relative organisational size and unit dispersal positions	233
Figure 66. The parsing of the structuring and the internal composition of the three organisation levels of higher education: the HEI (meso) level, the HES (macro) level and the GHEN (global) level	236
Figure 67. The Medieval University of Bologna as a Mintzbergian Organigram Representation	281
Figure 68. The Medieval University of Paris as a Mintzbergian Organigram Representation	281

List of Tables

Table 1. The parsing of essential levels and points of view to the study of whole universities	12
Table 2. Universities founded, changed and abolished between 1500 and 1790	84
Table 3. The comparison of European national university models of the 19 th century	96
Table 4. The foundation and creation of new European universities in 1950–1984	105
Table 5. European universities in the data sample compared to the total HES population of their native countries 1962–2013	124
Table 6. Universities in the data sample compared to their affiliated HES models 1962–2013	126
Table 7. The typology professional organisation shapes of Mintzbergian forms of the universities affiliated with the HES models in the data	225
Table 8. The historical development of organisational orientation of universities as groups in the data per their affiliated university models	234
Table 9. The universities included in the research data at the start of the study period (in 1962)	275

1 Introduction: The Organisation of Universities as a Subject of Study

Universities are among the oldest institutions in the world, originally a product of the Middle Ages and Europe. Of those very few Western institutions that already existed 500 years ago and still exist today, a clear majority are universities (Lampinen 2003, 8). As Clark Kerr wrote in 1982 and others have verified: *‘About 85 institutions in the Western World established by 1520 still exist in recognisable forms, with similar functions and unbroken histories, including the Catholic church, the parliaments of the Isle of Man, Iceland and Great Britain, several Swiss cantons, and seventy universities.’* (Marton 2000, 21; Rider 2009, 88). Despite of all the misfortunes and calamities of mankind, the university as an institution has continued for nearly a millennium with remarkable resiliency. It has survived the rise and fall of nation states, revolutions, wars and fluctuations of national borders, depressions and industrial transformations. It could have done so only if it served some fundamental human and social need. This it has done, providing for man’s insatiable desire to know and for society’s need for knowledge and skilled labour, albeit not always consistently or effectively. Also, no other institution with the possible exception of the Christian church, has spread over the entire world like the university has done. (Haskins 1957, 1; Ross 1976, 253; Cameron & Whetten 1983, 269; Ridder-Symoens 1992, xix–xx; Gornitzka et al. 2007, 211.)

Structure is one of the most often manipulated but at the same time least understood features of organisations and public management: whenever politicians do not have better use for their time and energy, and while they must demonstrate a concern for public problems, they end up reforming organisations and administration, even without a deep understanding of either the pre-reform state of the organisation nor the objectives of the reform (Peters 2000, 199; Kivistö 2019, 153). According to Välimaa (2013, 47), it is often controversial what happens in a reform and what consequences they might have on the functioning of universities. Also, Maassen and Olsen (2007, 12, 14–15, 17) state that there has been a little research-based causal knowledge and empirical evidence on how a university’s organisation and its governance contribute to performance, yet weak and ambiguous data are often used to draw strong conclusions. Birnbaum (1988, 4) claims it is possible, though contrary to normal expectations, that in universities, management and performance are not closely related. Improvements in management might not yield comparable benefits in organisational accomplishment. Or, strangest of all, it might be that to at least some extent universities could be successful because they are poorly managed, at least as management is defined in other complex organisations. If this were to be true, attempts to improve management processes might diminish rather than enhance organisational effectiveness in universities. Indeed, there are examples of reforms – some expressly designed to simplify

organisations – that on the contrary have ended up making them even more complicated, and attempts to downsize some universities has instead made them even larger (for example, see Esko 1993).

Regardless, decades of research on the (re)organising of public organisations has not developed a clear paradigm for understanding them. It is known that organisational reforms tend to create more reforms rather than eliminating the need for them. It is vital to ask, why half a century of unprecedented growth and change in universities has not eliminated, or at least reduced, the claim that new radical reforms are urgently needed? Välimaa (2013, 47–48) responds that most reforms are top-down processes started by politicians with ambitions and purposes that may or may not correspond with the real situation of the *higher education institution* (hereinafter referred to as HEI) being reformed. Ridder-Symoens (1992, xxi) and Ben-David (2002, 123) have demonstrated that many university reforms have failed because they have been guided by political considerations rather than the requirements of education or research. I have personally observed this impact on reforms while working in the higher education field during the last 25 years. According to Hood (1998, 13), reforms are often created by following ill-informed or politicised decision-making or the latest management fads. Raivio (2008, 4) describes university reforms as the ‘new pandemic’, while Saarinen & Välimaa (2006, 94) describe international influences in universities with epidemic metaphors: national reforms can be seen as a ‘disease of change’ that has quickly spread across countries without criticism, infected by ‘viruses’ influenced by international politics and international organisations. Such ideologies come and go, whereas the universities themselves are a very old and solid ‘species’ of organisation (cf. Teichler 2008, 375–376). The fact that universities internationally are being hastily reorganised, with inadequate understanding of their nature as organisations, often resulting in either failure, little or no concrete results or even organisational anarchy, has been widely shared and accepted in the research literature (cf. McHenry 1977, xvi; Mintzberg 1983, 147–149; Birnbaum 1988, 4; Vanttaja & Ketonen 1995, 10; Hood 1998, 152; Ben-David 2002, 123; Temmes 2003; Teichler 2008, 362). Therefore the objective of my research is to produce new information and understanding of the organisational structures of universities, to aid future reforms.

1.1 The Research Subject: the Formal Organisation of Universities

I will rationalise why I have chosen just the *formal organisation of universities* as the subject of research in order to thoroughly understand the structures and reforms of universities. Organisations, as real and definable structures, have great implications for society and its members. The organisational structure of a university reflects the institution’s history, size, location and geography, philosophy and function, authority, economics and disciplines. Universities have multiple levels of organisation, each with specific

functions, and their administration is influenced both by the value priorities placed on teaching, research and public service, as well as the political structure and stance of the government, especially in Europe, where the national *higher education system* (hereinafter referred to as HES) has most often been an integral branch of the state. In other countries, like the United States, the relationship is not so close, and particularly in the business administration and ecclesiastical fields, a greater proportion of private – yet still mostly non-profit – universities exist. The government (national, state, local, etc.) is usually also their primary source of finances, and many initially private HEIs have gradually over the years joined the public sector. Then again, the role of the state in the affairs of universities internationally has been seen to decline in the 21st century. (Eurich 1981, 7, 28–41; American Council on Education 2001, 9.)

Birnbaum (1988, 28) claims that the organisational characteristics of HEIs are so different from other institutions that traditional management theories do not apply. The differences between universities and business corporations are indeed striking: business firms do not have tenured academic staff, they do not have to face criticisms from employees shielded by the principles of academic freedom, and they do not have alumni. Still, even if these would be the case, like Temmes (2011, 279), I claim from a factual basis that Birnbaum's conclusion cannot hold, and on the contrary it represents the classical bad argument. Instead, though they are complex, universities are composed of similar basic elements and structures as all other organisations, and thus must be as comparable as objects of research as any other in the field of public management. The universities' success might hence also depend on and their institutional problems could be solved through the means of organising and administration (ibid., 280). Since comparative research is driven by demands for educational reform and efficiency, it also offers excellent prospects for facilitating change in universities, and can produce results in a format most suitable for the use of future organisational decision-makers (Theisen & Adams 1990, 295). According to Altbach (2002, 2–3), classifying academic institutions and systems is within the realm of the possible, although few have comprehensively done it. Classification is not the same thing as ranking: the purpose is to objectively categorise universities by their functions and roles, so it will be easier to understand the differentiations that exist. Thoughtful classification can provide institutional categories to guide institutional planning, as well as introduce rationality into analysing the increasingly complex array of academic institutions. This work utilises various *university models* (defined in 4.1) in classifying universities and HESs, both as ideal type organisational models, and as historical organisational models of real universities, in order to group and analyse the qualities and the development of the organisational structures of existing universities and HESs in the data. Both of these levels (HEI and HES) need to be studied, because it seems that the organisational structures and the academic units of higher education might be, to a limited extent, interchangeable between these levels (see 2.4.3 for details).

There are strong theoretical claims that the universities' organisations are converging, as well as equal claims of precisely the opposite, that they are diverging (see 2.5), but not much practical research data or results available to back up either of these claims. Comprehensive comparative studies of European HESs and HEIs are hard to find. The key question 'What is actually happening in the development of the organisational structures of universities?' thus lacks empirical evidence. It is just the evidence that I want to generate in this work, in order to produce relevant findings in relation to the convergence and divergence claims, and for the benefit of research into higher education. As Teichler (2008, 376) concludes, in-depth analysis of institutional patterns of HESs might help to establish the likely alternative future scenarios of their development as organisations, and to analyse their major causes and phenomena comparatively for various futures – highly useful information for university decision-makers indeed. As the 'grand old man' of higher education research, Burton R. Clark (1996, 429) put it, *organisational imagination based on self-knowledge is superior to imagination based on organisational ignorance!*

1.2 The Importance of a Historical Perspective in Studying University Organisations

Scholars may argue about details, but it is a historical fact that the university as an institution began from the medieval universities of Bologna and Paris of the 11th and 12th centuries. Even though mutually different, based on their models there were already 63 universities in Europe by the year 1500, all of which got their organisation (student nations, faculties, colleges, etc.) by emulating an earlier paragon university, such as Oxford being based on the Paris model whereas others took their model from Bologna. This *filiation* of the legitimisation-based organisational structures is the universities' original way to procreate: as the oldest and respected universities had their structures and *modus operandi* copied into new ones, whole university traditions were created. The universities spread from Italy and France to Spain and England in the 13th and 14th, and to Germany, East and Northern Europe in the 14th and 15th centuries. From around the beginning of the 19th century until the Second World War marked the age of competition between nation states and their diverse university models, which strongly affected the development of universities in all of Europe (Rüegg 2004, 3–4). These were the national French, British, German and Russian university models (see 4.4), with key differences in the way the formal structures, authority relationships and governance were organised. By the end of the 19th century, the national German university model and its research university ideal prevailed and became the predominant model to influence all the others (cf. Rhoades 2003, 29; Rüegg 2004, 6; Brandser 2006, 151–156, 343). In the 20th century, the national application of the earlier university models gradually gave birth to national HESs in Europe. Still, many of the structural features of the older national university models continue their existence in the organisational structures of contemporary universities. As such, the organisational

structures of universities and HESs could be studied also by grouping them into corresponding four HES models. (Klinge et al. 1987, 14–15, 80; Sörlin & Törnqvist 2000, 75; Lampinen 2003, 9.)

In the globalized world of the 20th and 21th centuries, ideas and university models cross national borders freely and can be easily applied by anyone (Rhoades 2003, 29). This enables conscious design and *transplantation*: the borrowing of an organisational structure or a model from a paragon university or HEI, that is believed to be the most efficient or legitimate for the design (see 4.5.2 for details). Since the 1990s, also *benchmarking* has become popular in universities: the idea of establishing best practice from whatever countries or organisations that are at the leading edge of their field, and measuring the rest against that standard (Hood 1998, 5). According to Bogetoft et al. (2007, 443), benchmarking is particularly useful for universities: they have access to data on each other, since as mostly public entities, they are usually willing to share information, unlike in the for-profit firms, in which information is usually not shared for competitive reasons. This advantage is mitigated to the extent that universities compete. The wealth of data and knowledge accumulated with comparative higher education research has also stimulated a new era of cross-national borrowing (Theisen & Adams 1990, 295). At the same time, the historical models – still at the core of the universities' organisation – are often not understood by those managing and reforming universities, and rarely has this connection been studied empirically. Maassen and Olsen (2007, 6–9, 19) claim that the specific nature and history of the European university as an institution is widely neglected in the current university reform efforts. As W. B. Carnochan put it: '*It is a puzzle that universities, charged with helping to preserve the past, know so little of their own.*' According to Durkheim (1977, 86), the organisation of the university in its earliest days deserves notice not only for the light it sheds on what constituted the university in the medieval period, but because it helps to understand what a university is and should be in its paradigmatic form. It seems unlikely that in the course of its history an institution could rid itself totally of a characteristic which was thoroughly inherent in it at the moment of its formation. Hence, effective solutions to the problems of universities are unattainable without good knowledge of their history and traditions, which in turn have shaped the form of most contemporary national HESs. Focussing only on cross-section comparative research, or limiting it to the most recent past while neglecting historical traditions can narrow debate by implying there is no alternative to whatever actions modernity is held to mean. It is thus important to enhance the knowledge of historical structural factors and institutional developments affecting universities, which also acts as a good antidote to naive acceptance of novelty claims considering their organisational essence. (Gellert 1993b, 237, 244; Hood 1998, 16–17; Salminen 2000, 30; Maassen & Olsen 2007, 19.)

1.3 The Purpose and Outline of This Research

This research is *a comparative study of the organisational structures of well-established European universities*. Because of reasoning clarified in chapters 2 and 3, I am comparing the universities' organisational structures as configurations, and their change as institutional patterns of select well-established European universities, reflecting their venerable age as a contingent factor of their environment, and as affiliated representatives of the national, 20th century HES models (that themselves have been influenced by the 19th century national university models), in a 50-year period from the 1960s to the 2010s. The organisational structures of universities and their development have not been studied much and the change processes within those structures remain mostly uncharted. *I want to clarify, how the organisational structures of universities have changed and how do the historical university models, through their HES adaptations, manifest themselves in these changes. The more precise research problem and research questions will be focussed and formulated in 3.1.2, after the selection of an applicable theoretical framework fitting both the research task and available data have been decided in chapter 2.* Even as the scholarly discussion on the convergence versus divergence claims of university organisation has become intense, so far it mostly has not reached the change of the organisational structures of universities empirically. I want to contribute to that discussion. As the universities' organisational structures are subject to contingent factors like their age and size as organisations, the technical system of their operation, attributes of their environment and their power relationships, my analysis compares longitudinal data utilising Mintzberg's 'structures in fives' middle-range theory and organisational ecology within the larger framework of structural contingency theory, with an organic contextual comparison with juxtaposition as a method.

I have conducted this research following the guidelines of good scholarly practice set by the Finnish National Advisory Board on Research Ethics (2002; Lötjönen 1999; see also Hirsjärvi 2010, 23–27). As the used data on universities have been historical and available in a public and openly published form, no particular ethical challenges have arisen in the research process. In this research all text, references, quotes etc. both conform and are marked according to the so-called simplified Harvard (referencing) system for the English language (see Tella 1994; Hirsjärvi 2010, 351–352). It is notable that particularly in the sections summarizing the development of historical periods and/or several countries at once, the references from several sources have been paraphrased in order to condense the amount of information, and referenced accordingly only at the end of the corresponding paragraph, even as this intermittently might make the referencing harder to follow, especially in chapter 4 (cf. Hirsjärvi 2010, 351–357). So far, chapter 1 has outlined the subject matter and task of the research. After the theoretical issues and

options have been discussed and the theoretical framework selected in chapter 2, the research design will be formulated in chapter 3 with a precise research problem, research questions (see 3.1.2) and methods (see 3.2.2). Chapter 4 presents an overview of research on the historical filiation and development of the universities' organisational structures and their applied university models, in order to ground the main empirical analysis of the research data in chapter 5. Finally, chapter 6 provides the conclusions of the results of the research, their discussion and concluding advice to any university reformers of the future.

2 The Organisational Structures of Universities in Light of Theories

Once the subject matter of the research had been set at the formal organisation of universities, I had to find an organisational theory that could model the nature of the organisational structures of universities, as well as their change developments in an optimal way, and one that could also operationalise data for their empirical comparison. As there clearly existed a research gap on the long-term development of the organisational structures of universities in a transnational context, I also had to find empirical data that would be internationally comparative by its nature and would simultaneously enable the longitudinal comparison of the organisational structures of universities in an international context. I happened to find first the suitable data (for its description, see 3.2), which both had the potential to produce results able to fill the existing research gap, but at the cost of some limitations in its operationalisation to any viable theory able to involve the organisational structures of universities and their long-term development. In this chapter 2, I will first go through my path of studying and selecting of the theories for the theoretical framework and empirical analysis of my university organisation data in sections 2.1, 2.2 and 2.3, coming to Mintzbergs *structures in fives* theory (see 2.3) for the universities' internal organisational structures, augmented with the organisational population ecology approach (see 2.2.4) for the same universities looked as a population of HEIs at the HES level. Both theories also build on the 'bedrock' of the more general structural contingency theory (hereinafter referred to as SCT, see 2.2.2). Furthermore, as the universities' organisational structures' life cycle developments (reforms, mergers, divisions etc.), as well as their convergence versus divergence developments also needed deeper understanding and theoretical tools for the empirical analysis, a concise look at both are included in sections 2.4 and 2.5, respectively.

2.1 Looking for the Universities' Organisational Structures in Change

According to Wolin (2006, 417), there are values behind all organisations and they cannot be understood as research subjects without understanding both these values and the historical perspectives on the development of these organisations: organisations should never be studied as if they were just 'cross-cuts' of the present, because it would inevitably limit the analysis of their development. Flyvbjerg (2001, 39–40, 48) agrees by pointing out that in social sciences it is not possible to use predictive theory or try to emulate the ideal of normal science: that remains impossible due to the context-dependency and the very definition of social sciences. After over 50 years of higher education research, this 'practice always before theory' manner is also the conviction of Clark (2006, 548–558): as organisations, *universities can be considered to be both exceptionally context-dependent and complex*. Thus for Clark, *they should never be studied irrespective of their context*, which already rules out several theoretical possibilities,

like the relatively context free theories of economics. That being said, numerous theories could have been utilised in the study of the organisational structures of universities. As I had already found my empirical, longitudinal data, I considered from the start also the applicability of the possible theories, to the operationalisation of the research data, the potential of which had already convinced me (see 3.2).

In the 21st century, research into higher education has developed into a clearer discipline of its own (cf. Saarinen & Välimaa 2006, 95–109; Pekkola et al. 2014, 28–38). It focuses primarily on scholarly organisations, HEIs and HESs, their environment and links to the state and wider society. It studies universities as bureaucratic organisations, HEIs of research and education, communities of mixed values and norms, or corporations competing for resources (Vakkuri 2002, 305, 307). Universities and other HEIs could also be studied as organisations of public management, and institutional research, which deals with the organisational features of higher education. However, this perspective normally does not emphasise the organisational structure aspects or topics, unlike higher education research. The classic higher education research book is *The Higher Education System* (Clark 1983). Its theoretical concepts are still used decades later. Clark aims to understand the operations of HESs by describing both individual HEIs within the HESs and the HESs themselves as the sum of individual organisations and their sub-organisations as organisational groups. A HES is thus defined as containing everything that fits between the concepts of *organisation* and *society*. The parts of systems and their relations are outlined as horizontal and vertical dimensions. Some dimensions describe the structures of organisations, like authority relationships and practices between organisations. Other dimensions describe the unofficial sides of organisations, like the values, norms and beliefs concerning HESs. Clark's key concept is *authority*, which has several forms and levels in a HES: for instance a department, a faculty, a university, a larger multi-campus system, or a country's provincial or municipal government. The forms of authority can be discipline-based, enterprise-based or system-based. The internal forms of authority of a university can also be divided into a discipline-based academic element, represented by the departments and faculties; and a bureaucratic element, comprised mostly of the administrative organisation of officials. Both elements divide power between levels, like the faculties' and departments' levels. Clark's concepts are explanatory due to flexibility and adaptability: they make it possible to compare several quite different universities in a commensurable way, with largely varying organisational structures, existing in different countries with variable social environments. Clark's concept of authority resembles Etzioni's concept of *compliance* that has been used in empirical comparisons of several complex organisations and higher education from the point of view of their compliance subsystems since the 1960s. Etzioni (1975, 40, 90) points out that university divisions also differ substantially in their modes of control and involvement: a distinction between technical, managerial, service and institutional subsystems. Etzioni characterised universities as *normative* organisations: in them normative power is the major source of

control over lower participants (those who are ‘complying’), whose orientation to the organisation is characterised by high commitment. Compliance rests on internalisation of directives being accepted as legitimate. Leadership, rituals, manipulation of social and prestige systems as well as re-socialisation are among the more important techniques of control used in universities. These definitions mostly match Clark’s *authority* quite well. (Clark 1983, 7, 53–125; Kuoppala et al. 2003, 34–35.)

Research into higher education is often internationally comparative, because it creates far better preconditions for evaluating changes in the complex operating environments, in which the universities normally exist in. This way it is also possible to distinguish some specific features of higher education in national contexts that would be otherwise difficult to notice from the more global and general trends. Most higher education research can be divided into two categories: firstly the nation-focussed, country-by-country analysis of HESs; secondly, an analysis on the interactive global, national and local structures and actions of agencies and constituencies. Each of these categories suggests patterns globally, while they also offer significant national and local alternatives to these patterns. A third category compares similar types of institutions or academic disciplines across countries, which is neither nation state nor globally based. My research thus belongs to the third category, although I also maintained an awareness of the other two categories’ dimensions. (Kuoppala et al. 2003, 44; Rhoades 2003, 23–24.)

2.1.1 The External View: University as an Organisation versus University as an Institution

According to Olsen (2007, 26–28) and others (see Rider 2009, 84–96), universities seen externally as institutions ‘below’ the level of HESs can be considered fundamentally either as an organisation or as an institution. When seen as an organisational instrument, the objective is to achieve predetermined preferences and the issue is how to organise and govern in order to achieve tasks and objectives efficiently. Change reflects a calculation of performance and costs, and the university or its parts will be replaced if there are more efficient ways to achieve shifting objectives. However, when seen as an institution, the university implies a relatively enduring collection of rules and practices, embedded in structures of meaning and resources that are relatively invariant in the face of the turnover of individuals, resilient in their preferences and expectations and to changing external circumstances. Constitutive rules and practices prescribe appropriate behaviour, and the structures of meaning, embedded in identities explain and justify common purposes, direction and meaning. Rules and practices have a value in themselves while their effects can be uncertain or imprecise. For example, the benefits of universities are not easily planned or predicted; instead they can be enjoyed only after being gradually accomplished, as ripe fruit can be picked from a tree. The institutional perspective also assumes that well-entrenched institutions reflect the historical experience of a community, take time to take root and are difficult to

change rapidly and radically. Those belonging to the university are thought to be guardians of its constitutive principles and processes and are supposed to defend its institutional identity and integrity from outside and inside threats. In reforms, the organisational perspective emphasises the rearrangement of organisational structures in order to achieve greater efficiency, tasks and objectives, like the number of degrees and research publications being produced. The institutional perspective, however, emphasises the strength and well-entrenchment of the university as an institution, and the enforcement of existing characteristics vs. imposing alternative values, beliefs, principles or systems of governance on the university during and as a result of reforms. As an instrumental view, the organisational perspective dominates most university reform programmes and debates. Thus, *even though it is vital to understand both the organisational and the institutional character perspectives of universities, it is clear that in studying their organisational structures, I had to select the organisational perspective.*

2.1.2 The Internal View: Organisational Structure versus the Field of Science

On the other hand, while looking at the universities internally, Ketonen and Vanttaja (1995, 10) label the same division as the horizontal versus vertical levels of universities: the vertical emphasising administrative control and the horizontal the division of labour inside disciplines. Vertical decision-making is mostly resource allocation and administrative management. It sees university mainly as an organisation by emphasising measurable indicators and processes. Horizontal decision-making is mostly leadership within a discipline, usually by the professors. It sees university as an institution providing interpretations by emphasising the autonomy of research and teaching. However, even as these internal levels can surely be seen within universities, I judge their labelling to just horizontal versus vertical levels as too coarse and imprecise for the use of comparison of organisational structures of real universities.

Clark has described the same internal division more elaborately with the administrative structure versus the field of science positioning: the professors, teachers and students in universities are operating on two structures of organisation at the same time. Anyone doing academic work in a university belongs to a certain department, college or faculty etc.: it is possible to pinpoint their specific location within the organisation chart of the university. At the same they belong to an international network of scholars in universities with a shared professional identity in a specific discipline. A scholar thus belongs to two 'structures': the 'administrative' location within the university organisation makes up the first, while the 'scientific' identity and network of other scholars of the same discipline elsewhere makes up the second. These dual structures are a cause for tension and problems, because their internal logic of function is different. Together they create a matrix organisation normal to universities, where disciplines go alongside structural units. The disciplines themselves are independent of hierarchical organisations and

bring decentralised dynamics to the universities, whereas the structural organisations bind universities together as formal collectives. The combination functions like a cybernetic, self-regulative collective system, which responds only to a limited set of external control factors. It is therefore useful for the university to let its various parts mimic their surroundings and respond to dynamics from the disciplines. This adaptability and ability to constantly change and renew, while at the same time maintaining a relatively stable core, for Clark (1983, 187) is the main reason that the universities have survived and adapted to new circumstances for centuries. On the other hand, there is also a considerable amount of evidence that at the same time universities are conservative at maintaining their existing structures and resisting outside pressures for change. (Ibid., 31–32; Hölttä 1995, 59–64; Lampinen 2003, 6, 10–12.)

		Point of view to the university/HEI as a whole:	
		Organisational structure	Scholarly community
The level of study of the university/HEI:	External	Organisational perspective	Institutional perspective
	Internal	Formal organisation location (vertical levels)	Field of science location (horizontal levels)

Table 1. The parsing of essential levels and points of view to the study of whole universities/HEIs.

Keeping perspective at the HEIs below the level of HESs, all the above-discussed theoretical ways to look at universities and other HEIs as whole organisations/institutions I have condensed into Table 1 interpretation depicting and parsing their relations. To sum up, while being aware of the various previously-discussed points of view in studying whole universities, it was prudent for me to *focus my research task from the organisational structure point of view, and within it, from both the external and internal levels of study*. This also guided my more precise selection of theory further.

2.2 Formulating the Theoretical Framework: In Search of a Middle-range Theory

In this section, I will describe the path of consideration that led me in phases to focus and to formulate my theoretical framework for the practical comparative research task of the organisational structures of universities. The strands of organisational theories disagree about the processes shaping the world of organisations. According to Hannan and Freeman (1989, 11–13), three broad points of view include selection theories, adaptation theories and random transformation theories. *Selection theories* hold that most of the variability in the core structures of organisations comes about through the creation of new organisational forms and the demise of old ones. They argue that existing organisations, especially the largest and most powerful, rarely change strategy and structure quickly enough to keep up with the demands of changing environments. Instead they see major innovations in organisational strategy and

structure occurring early in the lives of organisations and organisational populations. *Adaptation theories* claim that organisational variability reflects designed changes in the strategy and structure of organisations in response to environmental changes, threats and opportunities, although the variants of this perspective differ widely on other dimensions. These include *contingency theories* emphasising structural changes that match organisational structures to combinations of technologies and environments; *resource dependency theories* emphasising structural changes that neutralise sources of environmental uncertainty, like when organisations lacking essential resources will seek to establish dependency relationships with others to obtain resources; and *institutional theories* holding that organisational structures adapt rationally to normatively endorsed modes of organising. All adaptation theories agree that the largest, oldest and most powerful organisations, like universities, have superior capacities for adapting to the circumstances of their environment. Size and power enable organisations to create specialised units to deal with emerging environmental problems, and these characteristics convey a capacity to intercede in the environment and to forestall or direct change. *Random transformation theories* claim that organisations change their structures in response to endogenous processes, but that such changes are only loosely coupled with the desires of organisational leaders and the demands and threats of environments. Organisational change is seen as ubiquitous and random with respect to the goals of the organisation and the demands of the environment. As I strive to frame the organisational change in the structures of universities, of all the abovementioned points of view, I decided to *utilise the adaptation theories with their subcategories*.

2.2.1 The Ecological Analogy: University Organisation as the Metaphorical ‘Organism’

As discussed in 1.2, all universities as organisations share basic features, but at the same time have almost an infinite number of variables on them. Durkheim (1977, 163) formulated this idea eloquently in the beginning of the 20th century: ‘*It is rare to find an institution which is at once so uniform and so diverse; it is recognisable in all the guises which it takes, but in no one place is it identical with what it is in any other. This unity and diversity constitute the final proof of the extent to which the university was the spontaneous product of mediaeval life; for it is only living things which can in this way, while fully retaining their identity, bend and adapt themselves to a whole variety of circumstances and environments*’. Universities reflect the political, social and intellectual conditions (as situational factors) of their environment, and so does their history. Rashdall, seeing a line from the medieval universities of Bologna and Paris to the English universities of the 1890s, wrote kindred thoughts in 1936: ‘*The universities of all countries and all ages are in reality adaptations under various conditions of one and the same institution. The university represents an attempt to realise in concrete form an ideal of life*

in one of its aspects. Ideals pass into great historical forces by embodying themselves in institutions. The university is indeed the only European institution which has preserved its fundamental patterns and its basic social role and functions over the course of history.' (Anderson 2006, 183; Evans 2010b, v.)

The universities' elaborate organisational 'adaptation' to local environments as institutions brings to mind two 19th century classics of science: Spencer, who used biological organisms as a metaphor for the social order among men (Scott 2008, 8–9; see also Salminen 2000, 21), and Ratzel, the father of political geography, who translated the ideas of evolution to the political sphere: like species are modified mostly by their environments rather than by chance, nations can be conceived as 'living organisms' that require territory and sustenance and follow similar ways of development in their environments (see Jones et al. 2004, 4–5). If this would apply to organisations as complex as nation states, surely universities in their surroundings could also be approached in the same way. Ratzel's ideas had followers like Kjellén, who attempted to develop a classification of states based on the Linnaean system; and the above-quoted Durkheim (1977, 86–87), who similarly saw the university as a paradigmatic institution with a 'body and mind', both developing and shaped through the passing centuries. Moreover, Flexner was thinking of a university as an 'organism' in the first decades of the 20th century (Kerr 1995, 15). In the more contemporary research, Pedersen (1997, x) sees European universities, instead of anything else, as 'social organisms'. All of these classics emphasised the universities' adaptation to their environments that led me to consider modern organisational theories with the same emphasis, and led me to the SCT.

2.2.2 Structural Contingency Theory (SCT)

SCT was proposed by Lawrence and Lorsch (1967, 185–210) and by Thompson (1967, 159–163) at a time when organisational theories at the ecological level gained prominence in organisation studies. SCT is one of the more influential and versatile theories operating at the organisation-set level. *The theory claims that organisations have no optimal way to be organised as such, and are hence assumed to devise structures that better enable them to adapt to the specific environments in which they operate.* Attention is concentrated on given focal organisations and the characteristics of their environment. In explaining the development of any organisation, the structure-adapting impacts and the organisation's external relations are seen as the decisive, *situational* or *contingency factors*, which either promote or discourage organisational change in structures. These include the *age* and *size* of the organisation; the *technical system* it uses in its operation; the attributes of its *environment*; and certain of its *power* relationships. (Mintzberg 1979, 215–297; Johanson 2002, 258–259; Scott & Davis 2007, 120–121.)

For Birnbaum (1988, 15, 42–43), the behaviour of organisations can mostly be understood through them

responding to their perception of their environment. Organisations must be responsive to their environments to survive, and the universities' responses have had profound effects on their governance structures and processes. Changes in financial and enrolment conditions, societal values, political and legal constraints, processes as well as physical and geographical matters are important elements of the environment which universities have to cope with. Changes in organisations are being caused more by their environments than by internal forces. The universities' have since their medieval beginnings depended on the contingency factors. If a university grows for any reason, as a result it tends to develop into a more complex form of organisation, but normally not the other way around. In this way contingent factors, like an insufficient level of university funding, massification or commodification of higher education, political launches or a conscious transplantation of a university model (see 4.5) would all promote organisational change. On the other hand, contingent factors like academic autonomy (as a 'technical system') and identity, a sufficient and stable level of funding, strong traditional university model, or venerable age of the university would all instead be discouraging organisational change. Thirdly, contingent factors like the function and orientation of the university, its operating environment or external stakeholders within the university governance also affect the development of its organisation.

SCT has also been criticised. According to Scott and Davis (2007, 140–141), contingency theorists place too much weight on external, empirical constraints for organisations, giving insufficient attention to actors and their capacity for choice. According to this so-called *strategic choice* argument, a given set of environmental circumstances can support many alternative adaptive organisational strategies and responses. Also, the division of labour and the differential contacts of participants with others inside and outside the organisations create divergent perspectives and interests as well as new sources of power that can be used to pursue these interests. Even though it is debatable in the literature on formal organisations, to which extent the changes in organisations mirror their environmental circumstances and to which extent deliberate wilful (re)organisation, eventually both can be seen to result from contingency factors. Donaldson (1996, 159–174) has in turn defended SCT through a critical review of the strategic choice argument and other arguments of the critics of SCT. According to Olsen (2007, 45), the idea of influential or deterministic environments gets support from the fact that universities have never fully controlled the direction, substance or speed of their organisational development themselves. Also large-scale processes such as the industrial, democratic and scientific revolutions as well as the developing nation states have fundamentally affected the universities' organisational development.

It initially seemed that the SCT would be a prudent option to be used as both the theoretical framework and its application to the research task. However, upon orienting myself deeper to the theory, I realised that even as it was properly orientated towards my research subject of the universities' formal

organisation, and fittingly also emphasised the long-term continuous adaptation and development of that organisation to the universities' environment, which could then be studied in a very long time period, as such the SCT still seemed to operate on a level too general or abstract to be a working basis for an empirical research task. According to Etzioni (1975, xi), the hands-on comparative study of organisations requires the application of a *middle-range organisational theory*, falling between high-level abstractions about the characteristics of organisations in general (like the SCT) and detailed observations about cases: models for the analysis of various organisational types must be constructed. According to Wirt (1986, 275, 277), the development of comparative theory requires explicit comparison, and in comparing organisations, one must proceed within a theory which enables the scholar to select the units of analysis to test the theory. One unit and dimension of the phenomenon being studied should be compared at a time; by taking one factor and its variables (different countries etc.) into inspection while keeping the other factors constant. Wirt (ibid., 280–283, 292) also points out that the mix of units to be compared is fortunately not endless: whatever the theory examined or the units compared, there is a surprisingly small set of combinations of dimensions and factors to be explored.

Fortunately, the SCT offers several applicable middle-range sub-theories for more practical research use. Hence, I decided to keep the SCT as the 'bedrock' of my theoretical framework, but to choose a middle-range theory, based on SCT, to actually operationalise the research task of studying the organisational structures of universities with the proper data I had found. According to Hannan and Freeman (1989, 11, 29–31), organisational sociologists made considerable progress from the 1960s and 1970s in developing methods for analysing variations in organisational structures and in developing theories to account for these variations. These developed the imagery of organisations that frequently fine tune their structures in order to adjust to the constraints arising from variable environments. I then oriented myself to such middle-range theories in order to find the one best suited for my research task and actual data.

2.2.3 The Aston Studies and Its Peers

The *Aston studies* was a British school of thought and a middle-range theoretical approach within higher education research from the 1960s onwards. It emphasised the measurement and explanation of organisational structure and examined those structures within their operational parameters and contexts. The aim was to 'measure' organisations in a general way, so that they would be comparable based on their organisational 'facts' instead of ambiguous titles and categorisations often used. The Aston approach relied on quantitative methods with a comparative research setting (See Pugh 1998; Bryman & Pettitt 1985; Bryman et al. 1983). More appropriately, it had a real capacity to operationalise the structures of organisations also at the subunit level, through five structural dimensions, and it also used

seven contextual variables, much like the contingent factors of the SCT, in its analysis. Furthermore, the approach was used in the comparative study of HEIs, for instance in a comparison of the structures of Canadian colleges, where it was found that large, publicly controlled colleges had both bureaucratic control and a large organisational hierarchy, while small private colleges had neither, and medium community colleges were in the middle-range in structural features (Holdaway et al. 1976, 132–135). However, as the Aston studies are today seen by many as a quantitative orthodoxy and considered old-fashioned, I deemed the approach, despite its benefits, as not being the right theory for my empirical research, because it would not have had the conceptual tools to model all the needed dimensions of the unit structure hierarchies found in my data. (Hinings & Lee 1976, 3–4; Holdaway et al. 1976, 117–119.)

Another middle-range organisational approach thriving in the 1970s and 1980s was *organisational life cycle theory*. Jirásek & Bílek (2018, 2–15) summarise six decades of contributions to this theory with five major stages in the life cycle of all organisations: founding, growth, maturity, decline and revival, even as real organisations often do not follow the stages in respective order or in their entirety. Despite their presentation as a series of stages, according to this approach, organisational life cycle should not be considered strictly sequential or deterministic. Cameron & Whetten (1983, 273–276, 281–96) tried to apply summary models of organisational life cycle theory also to higher education. They defined organisational life cycle as a predictable change in organisations from one state or condition to another, focussing in evolutionary change. While this approach presented thought-provoking notions about the various stages and transitions the universities may face relative to their environmental demands during their life cycles, such life cycle models were too sketchy to be utilised in my research. They cannot map organisational structures of HEIs or their development *per se*, independently of the life cycle stages and transitions, which in the life cycle theory approach were also evaluated against criteria like effectiveness, which would necessitate a quite different type of empirical data that had been available to me.

Also newer middle-range research theories for studying university organisations have appeared. Becher and Kogan (1992, 8–21) studied British universities using a *synoptic model*, in which there were four structural components in any HES or HEI: the individual, a basic unit (subject-based department, school etc.), the institution, and a central authority (of a state etc.). For all systems, there were the normative and the operational modes, both of which had an internal and external dimension. All these were organised into a synoptic model matrix with 16 corresponding cells. As original and process-focussed this approach was, it would have been insufficient in theoretically describing the actual universities' diverse and complex organisational structures found in my data. Another fascinating, recent method (Bonaccorsi & Daraio 2007), used on the empirical study of universities of Italy, Norway, Portugal, Spain, Switzerland and the United Kingdom, was based on a *input-output-type quantitative approach*

and the econometrics of higher education. While also this approach had applicable aspects, like looking at universities not as 'cases' but as units of observation, and utilising their existing data, I had to deem it also as not usable, as its quantifications could not have been used to map out organisational structures.

One more, older approach of Miller and Friesen with Mintzberg, a *quantum view* of organisational configurations in the 1980s, had a method of analysis redolent of the Aston studies. In this approach, organisations were treated as complex entities, whose structure, strategy and environment are seen to have a 'natural' tendency to coalesce into quantum states or configurations like the atoms in physics. Since organisational structures, production systems, information-processing procedures, strategies and environments all tend to influence each other, according to Miller and Friesen (1984, 1–8, 211–219) they do so in a small number of extremely common, sometimes discretely different configurations, which they isolated in the typologies and taxonomies of their work. Each configuration should also characterise numerous aspects of many organisations, and they may describe departments, divisions, organisational structures or even networks of organisations. In its methodical approach (ibid., 36–63), the quantum view used mathematical and statistical tools of correlations, algorithms, cluster and factor analyses and multidimensional scaling. Based on such statistical techniques and quantitative data they tested hypotheses and tried to emulate natural science in their quest for organisational taxonomies, which they found as both unsuccessful and successful archetypes of organisations, and taxonomies of organisational transition (ibid., 90–151). However, this approach was not one that could operationalise my data in an optimal way. Also, Hannan and Freeman (1989, 11, 29–31) claim that approaches like this became preoccupied with a narrow set of static concerns focussed on the interrelations of various aspects of formal structure and the effects of size and technology on these characteristics. Organisational theory and research thus lost much of their relevance, because the theorists failed to make explicit the links between organisational processes and general processes of social organisation and change. This paved the way for other approaches, like the more easily applicable organisational ecology.

2.2.4 Organisational Ecology and its Application to Universities

If the ecological analogy described in 2.2.1 of at least metaphorically comparing the organisational structure of a university to the anatomy of an organism, ecological organisation theories might reveal relevant aspects of both the long-term filiation and 'population' level developments of the organisational structures of universities. According to Kuoppala (2014, 258–259), organisational research at the ecological level began, like the SCT, in the 1960s, as organisations were perceived more as being open than closed systems. This put the focus on the environment of organisations, and more natural models and adaptation theories (described in 2.2) for organisations developed. As one of these, a school of

scientific thought for *organisational ecology* was evident in the 1980s (see Miller & Friesen 1984; Hannan & Freeman 1989), which focussed on the relations in a group of organisations that have developed into a population, in which the organisations are at least somewhat similar regarding their qualities. The research object became the similar and dissimilar forms of populations, their competing strategies and selective effects of changing environments. These had their origins in the natural selection theories originating in biology with Darwin. According to his *The Origin of Species*, ‘...species at any one period are not indefinitely variable, and are not linked together by a multitude of intermediate gradations, partly because the process of natural selection will always be very slow and will act, at any one time, only on a very few forms; and partly because the very process of natural selection almost implies the continual supplanting and extinction of preceding and intermediate gradations’ (quoted by Miller & Friesen 1984, 20). Hannan and Freeman (1977) argue that formal organisations may be subject to selection processes similar to those of the biological species: both survive only if they evolve in ways which have adapted to their environments. Although the application of the Darwinian ideas to social systems has a long and checkered history, according to Scott and Davis (2007, 246), since the 1950s to the 2000s there have been promising applications of these ideas to a growing body of research and theory. Carroll and Hannan (2000) have even proposed that the organisational ecology framework be broadened to *corporate demography*: like a lot of scientific effort has been put in understanding the varying life chances of populations of individuals, comparable efforts are called to understand populations of organisations, ranging from single-site establishments to multi-unit ones like corporations.

In *The Population Ecology of Organisations*, Hannan and Freeman (1977, 930–935, 957) expressed their ‘doubt that the major features of the world of organisations arise through learning or adaptation’. Organisational ecologists challenge the assumption of contingency analysts that organisations can readily change their basic structural features. Instead they claim that the changes most observed in organisations are superficial. To use a species analogue, the organisation’s basic structure is fixed shortly after birth, in a kind of ‘genetic blueprint’. Subsequent actions make it rigid and difficult to change. In addition, organisational structures are subject to strong external pressures toward inertia. This does not mean that organisations never change, but that they respond slowly to the threats and opportunities in their environments (Hannan & Freeman 1989, 70, 90). Change is viewed as hard, rare, and dangerous to the organisations. Rather than being planned or internally induced, the sources of change come from the environment – in population-level processes or in demands and pressures stemming from the likes of nation states or the professions. For Hannan and Freeman (ibid., 48–53) an organisational structure also gives unitary character to populations of organisations. Using the same analogue of organisational genetics and blueprints to the structure that reproduces biotic forms, taxonomies of organisations can be based on the structural equivalence, even though the process of transmission of structure is not as

unitary for organisations as it is for biotic species. Still, by tracing the organisational genetics between organisations' 'species', family-trees of these species can also be specified. (Scott & Davis 2007, 246.)

According to Hannan and Freeman (1989, 7) and Scott and Davis (2007, 121, 247), ecological theory and evolutionary models may be applied at any level of organisation, but the bulk of studies concentrates on the population level. Organisational populations comprise of all organisations sharing the same general form. The approach seeks to answer, why are there so many – or so few organisational forms? While diversity occurs partly as individual organisations change their organisational characteristics through adaptation over time, ecologists have devoted attention to selection processes. This means specifying sources of increasing diversity (the creation of new forms) and decreasing diversity (the competitive exclusion of forms). Organisational ecology thus seeks to understand how social conditions affect the rates at which new organisational forms arise, change and die out. Population ecologists perceive organisations like biologists perceive fruit flies – in terms of collective behaviour. The birth of an organisation via an innovation introduces variation into a population. The innovation gives the organisation an advantage, but survival depends on its ability to acquire an adequate supply of resources, which are finite in each environment. In a new growing industry, the environment may be able to support most existing organisations. But as these grow and more enter, the environments *fixed carrying capacity* will be exceeded. Then a struggle for resources drives out the less fit organisations. The environment sets the 'fit' criteria: organisations that meet these, survive and those that do not are selected out. (Kuoppala & Marttinen 1995, 101–109; Mintzberg et al. 1998, 291–292.)

According to Hannan (2005, 52.), the empirical research strategy of organisational ecology has four characteristics: 1. It selects populations of organisations and examines their full histories, 2. It gathers data on all organisations in the populations, including the large and famous as well as the small and insignificant, 3. It records information about type of entry (new founding, entry from another industry, merger, division of an existing organisation) and exit (disbanding, acquisition, transformation) for each organisation, and 4. It estimates the effects of characteristics of organisation, population and environment on the patterns of entry and exit. This population-based research strategy has been diffused widely to areas of social science research that necessarily do not share organisational ecology's theoretical commitments. There is agreement among organisation ecologists on two methodological precepts: 1. Study the entire population. To focus only on a subset leads to bias in understanding the full range of organisations; 2. Study processes that take place over time rather than relationships between variables at a single point of time. Focussing on processes uncover connections other than cross-sectional studies. The ecological approach has created a lot of interest among students of organisations: it employs a highly regarded (Darwinian) framework and has adapted sophisticated concepts and

dynamic models from population biologists. By emphasising the population level of analysis, it has focussed on new issues ignored by earlier theorists (Scott 2008, 88–89). Regardless, also critiques of the population ecology of organisations have been numerous. They object that organisations are not fruit flies and organisational decisions are not programmed by genetic endowment. According to Hannan (2005, 51), many sociologists consider organisational ecology as heterodox; a preoccupation with numerical patterns and reliance on ideas from biology is seen as troublesome, even though no reference is made to any biological mechanism. (Palonen et al. 1992, 15–16; Scott & Davis 2007, 246–248.)

When applied to universities, the population ecology idea of development of organisations to fit to the conditions and distribution of resources in their environments enables seeing the HESs as organisational populations composed of HEIs, and the HEIs as organisational populations composed of their internal units (as their organisational structures). Hence the relationship of populations and their environment has adaptation and selection interpretations. Adaptation means the decision-makers within HESs and HEIs are consciously able to change their organisations to fit changes in their environment, thus ensuring continuity. Selection means the selection of the environment, based on the competition about scarce resources, is the basis for changes in the HEIs organisations. This way the change in universities by ‘natural selection’ would produce universities that better fit their environments, but not necessarily otherwise more developed organisations. In an organism, the parts and the whole are inextricably bound together. But the differentiated universities are another case: they are ‘open’ and ‘loosely bound’ organisations: open relates to their constant and versatile interaction with environment; loosely bound describes academic structure, where the parts of an organisation function as if they were independent organisations of their own (Kuoppala 2014, 276). Hence organisational parts can also be added and subtracted with little effect on the whole, little notice taken or without any ‘blood spilled’. It is more a mechanism: a series of processes producing a series of results held together by administrative rules, powered by funding. As the institutional and technical environment of an organisation have a different kind of logic, they also set a different kind of demands. When forming and adopting organisations, the technical environment is defined by demands for efficiency and the institutional environment by its need to comply with socially legitimate rules (cf. Table 1 in 2.1.1). In universities, the departments and faculties are often arranged according to the technical demands: by disciplines, similar units at the same organisation level or units sharing a similar function at the same level in the overall organisation. But their organisation can also be based on the legitimation demands: as in filiation, organised the way they exist in a more prestigious or innovative university (cf. Palonen et al. 1992, 183). Both of these should lead to a converging organisational field, because they adopt efficiency-proven structures due to competitive pressures and legitimately-held structures due to social demands. Adopting new structures from other organisations into new parts of existing ones also diversifies the organisational field. At first,

new structural solutions are developed to solve organisational problems, but when they are found to be efficient, they will be adopted by other organisations due to social legitimacy. When an organisational solution has legitimised itself by proving to be efficient, other organisations can adopt it without testing its effect first. The more generally accepted and institutionalised a solution this is, the more it is also perceived to be efficient and necessary for any organisation, although its efficiency had not been proved for all kinds of organisations or in all kinds of environments. (Kuoppala & Marttinen 1995, 101–109; Kerr 1995, 15; Houtsonen 2002, 52–53; Viljamaa et al. 2011; Kuoppala 2014, 255–256.)

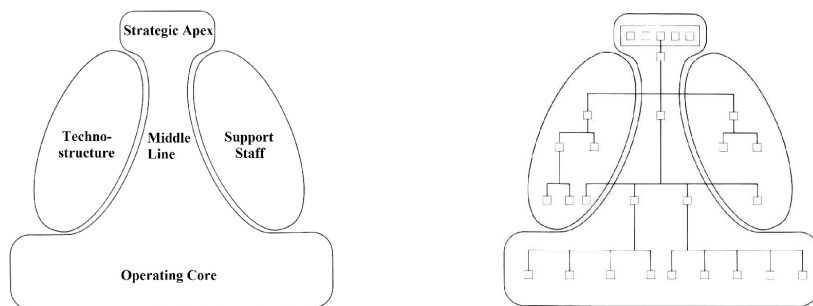
In evaluating the organisational ecology and the population ecology approaches as well as their application to university organisations, for the purposes of my own research and existing data, I judged them to be quite applicable to the study of the universities of my data as a population of their macro level of HESs, but not as useful in operationalising my primary data of the internal organisational structures of universities, or in analysing their change developments at the meso level of HEIs. Finally I found one middle-range theory based on the SCT, that ended up most useful also for this latter main research task.

2.3 Henry Mintzberg's Theory of Structures in Fives

The organisational concepts of Henry Mintzberg, focussed expressly on the organisational structure aspects and internal dimensions and parts of organisations, and the factors affecting their change, then provided me the supreme set of theoretical tools for my research. I claim that this holds even when the data available had limitations and demarcations (see 3.2 and 3.2.2) that would not cover every aspect of the theory. The highly complex and variable university organisation data was tackled with Mintzberg's *structures in fives* theory, introduced in his classic book *The Structuring of Organisations* (Mintzberg 1979). Its ambitious concepts are widely used in studying structural features and functions of complex organisations (Temmes 2011, 281–282). *The theory*, later also developed for new types of organisations and confronted with problematic issues (see Mintzberg 1983, 9–297; Mintzberg et al. 1998, 285–373; Mintzberg 2002, 187–194), *makes it possible to divide any organisation, no matter how complex, into five functional parts* (see Figure 1), *which have a flexible and scalable interdependence thereby enabling the study of different organisations as diverse configurations*. This in turn enables the operationalisation of any organisation into their structural 'building blocks' that can be compared with juxtaposition to similar organisations in a commensurable way as configurations. As such, structures in fives is the most versatile and practical middle-range research theory for the purposes of my research.

Mintzberg (1983, 2) defines the structure of an organisation as 'the sum total of the ways in which its

labour is divided into distinct tasks and then its coordination is achieved among these tasks'. The organisation chart – Mintzberg prefers the term *organigram* – though rejected by some organisation theorists, is a controversial yet important description of major power and communication relationships of the organisation. When put to context, it is like a map: invaluable at finding 'towns' and their connecting 'roads' but it tells nothing about the economic or social relationships of the regions. Similarly, even though it does not show informal relationships, the organigram can present an accurate picture of the division of labour, showing at a glance, what positions exist in the organisation, how these are grouped into units, and how formal authority flows among them (see Figure 2). It is through the process of grouping into units that the system of authority is established and the hierarchy of the organisation is built. The organigram is the pictorial representation of this hierarchy. (Ibid., 19–20, 45.)

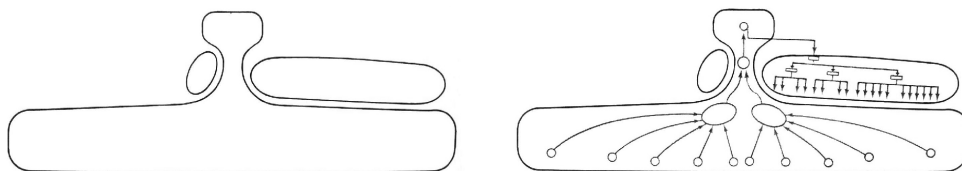


Figures 1. & 2. The five basic parts of the organisation and their relation to the units of formal authority forming a hierarchy of the organisation (adapted from Mintzberg 1983, 11, 20).

Looking at HEIs, one must look mostly at the *form* of university organisation, for example: what units exist below a certain university's institutional level? It is also important to focus on the nature of those units, for example: which fields of science are represented as faculties or departments in a certain university? How are disciplines and interdisciplinary fields manifested in the formal organisational components of a HEI? According to Birnbaum (1988, 109), organisational structures make a difference in universities, and even simple organisation charts of HEIs contain important information that might be overlooked by the casual observer. For example, the number of levels between the highest and the lowest offices on any chart can be counted. Organisations with relatively few levels are considered 'flat', and those with more are considered 'tall'. Fewer levels lead to less distortion in communications through the system. At the same time, it means more actors reporting at each level, who therefore cannot be as closely monitored. The existence or nonexistence of an actor on the organisational chart and their location in the hierarchy are a signal both inside and outside the campus of the importance of the substantive area. Location on the chart has a practical effect as well: actors located near each other on the chart are more likely to interact with and influence each other. (Becher & Trowler 2001, 41–42.)

Organisational design is seldom carried out in a vacuum; in general, it proceeds with knowledge of past structures. Organisational design is in fact much less common than organisational re-design – incremental shifts from existing structures. According to Mintzberg (1983, 48–52, 65–66), in organisational design, organisation units can be grouped according to one of the following bases: by specialised knowledge and skill, by work process and function, by time, by output, by client, or by place. Out of these, it would seem that the organisational units of universities are always grouped either by knowledge and skill (representing the disciplines of research and/or education, and sometimes also their levels), by output (if research units are separated from education units etc.), by clients (if units for open/external studies are separated from normal units) or by place (when universities have affiliated units/campuses in other cities). Another basic issue is unit size: how large a staff should each unit or work group have?

The universities' configuration is a *professional bureaucracy* (see Figure 3), characterised by a horizontal differentiation based on the fields of science (faculties, departments, colleges, schools etc.). These are arranged into hierarchies, deliberately or otherwise (Clark 1983, 53). In fact, all universities in existence seem to conform to a hierarchy, at least from the points of view of their formal organisation and flow of authority. Diefenbach and Sillince (2011, 1515–1516) point out that despite all claimed organisational change towards postmodern and more informal organisations, hierarchical order remains still quite persistent in most organisations. Basically, any university as a hierarchy can thus be drawn in Mintzbergian concepts and interpretations, to understand and analyse their characteristic organisational structures, operationalised as configurations (for reference on how this implementation is done, see Temmes 2011, 282). In the professional bureaucracy, the prime coordinating mechanism is the standardisation of skills, and the operating core is the key part of the organisation. The only other part that is fully elaborated is the support staff, but that is focussed much on serving the operating core (see Figure 4). Support staff exists in almost any large organisation, as specialised units, to provide support to the organisation outside its operating work flow. Given the high cost of the professionals, it makes sense to back them up with as much support as possible, to aid them and have others do whatever routine work can be formalised. Universities thus often have payroll departments, janitorial and postal services, security departments, switchboards, printing facilities, publishing houses, bookstores, archives, athletics halls, alma mater funds, faculty clubs, student residences and so on. None of these is a part of the operating core of scholarly professionals; none engages in teaching or research or even supports it directly (as the libraries and computing centres do, which are borderline), but are instead organised separately and independently in their own group, away from line organisation and the operating core, to avoid conflicts (ibid., 282; Kuoppala 2014, 278). This is prudent, since as Lockwood (2011, 144) puts it, the history of the universities in Europe since the Second World War is one of a growing political tension between the 'technocrats' and the academic community. (Mintzberg 1983, 16, 189–213.)



Figures 3. & 4. The Professional Bureaucracy type of organisation drawn the Mintzbergian way, and an example of a university-type parallel hierarchies inside it (adapted from Mintzberg 1983, 194–198).

The professionals have considerable control over their own work, and the standards of the professional bureaucracy originate largely outside its structure, in the self-governing associations its operators join with their colleagues from other professional bureaucracies. In universities, these include the principles of science and some of the characteristics of those university models being followed. The technostucture and middle line are not highly elaborated in the professional bureaucracy, because they can do little to coordinate the operating work in a practical sense, as is the case in other configuration types. Because the need for planning and the formalising of the professionals' work are limited, there is little call for a technostucture. The design parameters of professional bureaucracy include training, vertical and horizontal decentralisation, and horizontal job specialisation. The situational factors include a complex, stable environment; are fashionable; and are a non-regulating, non-sophisticated technical system. Professional bureaucracies are by nature highly democratic structures, at least for the professionals at the operating core: in addition to coordinating their own work, they also seek collective control of the administrative decisions that affect them. This requires controlling the middle line of the organisation, which professionals do best by ensuring that it is staffed 'with their own'. Because of the power of their operators, professional bureaucracies are often called collegial organisations. Some professionals like to describe them as inverse pyramids, with the professional operators at the top and the administrators down below to serve them. (Mintzberg 1983, 189, 194; 2002, 171–176, 178–179.)

Based on factual findings on a large amount of organisational research, Mintzberg (1979, 219–292) has also developed 16 hypotheses of organisations' structural effectiveness, which describe in detail, how organisations function and change subject to the contingent factors of their age and size as organisations, their technical system of operation, the attributes of their environment, and some of their power relationships. A few of these hypotheses also have relevance for my research task and data. I will present and evaluate these few in 5.4.4 and return to them once more in my conclusions in 6.1.

To wrap up, after a thorough study and search of the comparative organisational theories applicable for both the institutions and systems of higher education, and in order to operationalise the potential of the research data I had found, I ended up using a theoretical framework grounded on the 'bedrock' assumptions of the SCT, with Mintzberg's 'structures in fives' middle-range theory (based on the SCT)

at the heart of the framework. Mintzberg's versatile concepts were best suited for the internationally comparative research task and the specific data operationalisation (see 3.2.2) of the organisational structures of European universities and their long-term development. Also, the SCT compatible organisational population ecology approach is utilised as a part of the framework, particularly in the study of the universities of my data as a population of their macro level of HESs (see 5.5) and their convergence vs. divergence developments (see 5.6). It must be emphasised, that by focussing on the formal organisation of universities only, the data and analysis by their nature cannot answer questions regarding to the deeper activities, motivations or values behind the observed changes and developments in the organisational structures, even as these are theoretically assumed to depend on the contingent factors of the universities' environment, and can be historically speculated (see 4.5 and its subsections).

2.4 The Birth, Life and Death of Universities' Organisational Structures in Theory

As inherent in the Mintzbergian term 'professional bureaucracy', the universities as organisations have been considered as bureaucratic and complex. These terms have been held as synonymous, and the bigger the organisation, the more likely it is seen to develop bureaucratic organisational structures (see Child 1976, 45; Hinings & Lee 1976, 8). But is this so? Looking at the life cycles of the organisational structures of universities, organisational theories offer suggestions (see also organisational life cycle theory discussed in 2.2.3). The father of organisation theory Weber (1978a, 48) defines an *organisation* (*Verband* in German) as *a social relationship which is either closed or limits the admission of outsiders and which has its regulations enforced by specific individuals*. Weber (1978b, 952–953) also defines an *organisational structure* as *the organisation's specific way of distributing the powers of command*, achieved through a special, perennial structure for administrative purposes that integrates all of its functionaries into a hierarchy culminating in one single head. According to Mintzberg et al. (1998, 294–295), organisational sociologists picked up where Weber's thinking of technical and managerial rationality and increasing bureaucratisation left off, creating *institutional theory*: concerned with the institutional pressures an organisation faces in its environment, from other organisations and from the pressures of being an organisation. The environment is seen as a repository of economic and symbolic resources. Economic resources include the money, land and machinery. Symbolic resources include reputation of efficiency, leaders celebrated for achievements, and the prestige from connection with powerful other organisations. The environment consists of the interactions among key suppliers, consumers, government, and competitors. Over time this produces a complex and powerful set of norms to dominate practice. An organisation must meet and master these norms to succeed. This drives organisations to adopt similar structures and practices. Organisational structure is seen as a means to

coordinate rationally activities that would otherwise be scattered, and as reflecting perceptions about the nature of social reality. For Durkheim (1977, 166–167), educational transformations are always the result and symptom of the social transformations in terms of which they are to be explained. In order for a people to feel the need to change their educational system, new ideas and needs must have emerged for which the former system is no longer adequate. These needs and ideas are not born of nothing; if they come to human consciousness, there must have occurred a change, of which they are an expression. Aula (1999, 111) points out that instead of a multiform yet stable structure, an organisation can be also defined as a series of modelled, recurrent changes, which makes it easier to spot disorders and inconsistencies. (Houtsonen 2002, 43; Morpew & Huisman 2002, 496.)

For Clark (1983, 37), horizontal differentiation within a university is the primary form of division by fields of science. Such division has occurred usually at least at two levels of organisation, although complex universities may exhibit as many as four, since each level also develops substructures to help carry out their tasks. The traditional European university governance model has been collegial, but studies show that in coming to the 21st century, across Europe, there has been a policy push for a more professionalised administration and greater authority for rectors/vice chancellors and managers in universities (Rhoades 2003, 30). At the same time a surge of organisational literature on networks and partnerships between organisations appeared (cf. Mattila & Uusikylä 1999; Hinings & Greenwood 2002, 418, Aniluoto 2004a, 97–98). Even as universities have always been dependent on international interaction, the networking of universities in has in the 21st century clearly increased: a multitude of local and national consortiums and international leagues have been founded (cf. Aniluoto 2004b, 69–70, 84; Nokkala 2014, 126–128; Välimaa & Hoffman 2016, 5). Regardless, my focus remains on how the universities’ organisational structures are born, how they develop and how they perish at their HEI level.

2.4.1 The Birth and Creation of Universities’ Organisational Structures

Institutions play not only a constraining role via norms and rules, but also a generative one, formulating organisational structures. Models for organising arise and diffuse in numerous ways, and provide the basis for crafting an ‘organisational genetics’ to complement organisational ecological approaches. I shall have a look at three such processes of organisational creation. As described in 1.2, the oldest and prevalent way for universities’ organisational structures to be born, is *filiation*: the emulation of the organisational structures and patterns as embodied in an existing university, normally considerably older and more prestigious. Filiation thus reproduces organisations of the same ‘type’. Universities are also internally made larger by expanding and ‘duplicating’ existing units or their respective parts at different levels, a ‘more of the same’ approach since expansion reflects the existing pattern. Differing models arise

at least by *compilation*, when an intermediary (like a corporation lawyer or a management consultant) observes variations in forms in a developing community of organisations and codifies them as models to be emulated; or by *bricolage*, when components – one might also call them ‘organisational genes’ – from various existing organisations are combined into new hybrid ones. (Scott & Davis 2007, 263.)

The second way for universities’ organisational structures to be born is through *function-based organisation motives*. As an example, the German universities based or reformed in the 19th century were shaped with efficiency-based technical and function motives, like the ideal that universities represent high culture and universal education (see also 4.4.2), whereas applied professional higher education, including technical, business and other vocational fields were to be separated from universities to HEIs of their own (Tuori 1987, 78; Patomäki 2009, 25–26). Also, ‘traditional’ departments and schools, responsible for teaching in just a single discipline, at most European universities have at some point been grouped into faculties, containing units of broadly related disciplines instead (Hogan 2005, 49). Other function-based organisational motives come as environmental changes and pressures (as contingent factors): universities establish special units in order to create structural compatibility with that environment. Such units work with those external organisations that the university co-operates or is in partnership with. This often makes these units functionally more like these external organisations and less like the other, ‘normal’ units of the university. Such variety within the units a university is composed of can bring the problem of maintaining integration, but through it the university often also accumulates external funding from a source outside the university, when such a source has an interest to support research or education of a corresponding field. In Clark’s terms, this creates *academic drift* in universities: firstly, research is differentiated from common education units into separate research units; secondly, teaching differentiates from common education units to separate, specialised schools etc. By adding societally accepted rational elements to their organisation, the universities maximise their societal acceptability and capacity to cope as organisations. (Juva 1970, 35; University of Helsinki 2000, 12; Rekilä 2006, 167–175.)

A third option for the formation of organisational structures is that of *conscious organisational design* aimed for a purpose. A growing number of university reformers seem to believe that a university can be an object of conscious and resolute design. This has been popular since the 1990s, when strategic management became widely used also in the public sector of many countries. According to classical strategy thinking, the strategy of an organisation also defines its organisational structure, like a strategy to diversify leads to a decentralised organisation; a modern approach has optional theoretical views on the relationship between an organisation’s strategy and organisational structure (cf. Johanson 2002, 258–259; Scott & Davis 2007, 120–121). Also Mintzberg (1983, 296) concludes that *for new conditions and environments for organisations, effective structuring sometimes requires the creation of new*

configurations (for Mintzberg's definition of a configuration, see 3.1), an original consistent combination of design parameters and contingent factors. In other words, play 'Lego' with the pieces instead of 'jigsaw puzzle'. Not all organisations can create new structural forms, but to be effective, some must. Syväjärvi (2013, 177–178) calls this creative optimisation *administrative architecture*. Still, such designs even for entirely new universities are only rarely not based on, or resemble, already existing organisations – filiation, compilation and bricolage still dominate as design 'tools'. Also, the use of *transplantation* (see 4.5.2) is common: the borrowing of a part or a feature of a paragon university organisation that is believed to be efficient or legitimate for the design purposes.

2.4.2 The Meanings, Motivations and Consequences of Reforms in Higher Education

Reform in higher education has several meanings. *Reforms can occur within a single university or HEI, between two or more, or subjected to the HESs of one or more countries simultaneously.* As an example of a university-internal reform, in the 'campus structure reform' of the University of Helsinki from 2001 to 2003, the rearrangement of the organisational structures of several faculties, departments and other units were rationalised in the decision-making by a reference to similar organisational units and elements at other prominent European universities (University of Helsinki 2002a, 38; 2002b, 33, 67). Reforms of two or more universities and/or other HEIs include *mergers* of existing HEIs, and *divisions* of HEIs or their parts into new HEIs (see 2.4.3). Examples of a national HES reform include the establishment of the *Polytechnics* in Britain, the *Instituts universitaires de technologie* in France and the German *Fachhochschulen*, which according to Teichler (2008, 360) and Reichert (2009, 16) are referred to as visible reforms towards a *binary, bifurcated* or *two-type* national HESs. The higher education aspirations and cooperation at the EU level provide an example of reforms spanning multiple countries (see 4.5.7).

To reform the organisational structures of universities is an arduous task. History is filled with unsuccessful university reforms, owing to the sudden, radical or comprehensive nature of the change (for reference, see Cerych & Sabatier 1986, 3–4, 254–256; Vanttaja & Ketonen 1995, 16–21). According to Halász (2010, 51–52), universities are both resistant to change, interacting with the environment and changing their behaviour as needed in order to survive, thrive or avoid deterioration. Both external and internal factors play a role in their capacity and willingness to change. A university operating in an open, highly internationalised context finds itself in a complex and dynamic environment, and is likely to be more open to change than one which serves mainly national or regional constituencies. Complex environments may thus create new organisational arrangements to test the capacity and willingness of HEIs to change. The national HES is also a strong factor influencing the universities' environment, and institutional changes often reflect national-level changes. One more distinction is between planned, *top-*

down changes vs. the emergent or incremental, *bottom-up* changes. The terms refer more to the nature of the change than its source or direction: top-down are deliberately planned, while bottom-up are based on improvisation and subsequent sense-making. When looking at successful structural reforms, often the best way to try out an innovation before a large scale adoption that could even be disastrous, seems to be experimenting with it: to launch a pilot project first. It does not require as much funding and if it succeeds, others might adopt the same model and learn from the pilot, thus avoiding the problems and concentrating on things that seem to work well. (Eurich 1981, 113, 139–140; Lampinen 2003, 10.)

Both nation states and universities themselves guide the universities' activities through strategic management. As the older universities have existed long before strategic or any type of management theory existed, strategies *per se* mostly do not define organisational structures of universities, but in order to achieve strategic goals, decisions that change the organisation are often made. Most reforms are rationalised by a claim by the reformers that the university's disciplines and their corresponding units, functions and processes are in the reform organised into better, more high-quality or optimally-sized (in budget or personnel) and functionally reasonable and efficient entities (Huotari & Kalalahti 2017, 21–25; cf. University of Helsinki 2002b, 8–13, annex 11; Mansikkamäki 2010, 35–39). Regardless of whether this is the actual case, Bonaccorsi and Daraio (2007, 262–263) and Huotari and Kalalahti (2017, 25) claim that even the most carefully planned genuine reform is always at risk of producing unintended consequences, even perverse effects or failure. All attempts to reform the relatively stable organisational structures normally bring forth emotional counter-reactions and protests from the academic community of scholars, who in their defence of the *status quo* feel that the current organisation better reflects their disciplinary identity, and thus claim that all reforms to it represent a threat to their jointly perceived social reality (Huotari & Kalalahti 2017, 28–30; cf. also University of Helsinki 2002a, 7–12, 33, 64–65, part 2: 2–4). However, both claims seem not to be a reflection of reality: mostly the reforms do not succeed well, and the worst fears of the academic community are not realised either, although there are claims that the expansion of strategic management has resulted in increased managerialism in universities, strengthening rule by managers, as opposed by the traditional collegiality (Uusitalo 1995; Mustajoki 2002, 135–142). This is supported by the fact that in multi-disciplinary universities, like in any corporate group, the board of directors is not able to have a precise perception of all the functions and parts of the university, which weakens collegiality and strengthens the position of the managers (the rector/vice chancellor, deans etc.) running the daily affairs (cf. Johanson 2002, 259; Aniluoto 2004a, 121).

2.4.3 The Mergers and Divisions of University Organisations

In recent years, institutional *mergers* have become a widespread phenomenon in higher education as well

as a popular policy tool address its challenges (Pinheiro et al. 2016). Skodvin (1999, 65–68), who has compared mergers in the Netherlands, Norway, Sweden, Finland, Belgium, Germany, the United Kingdom, the United States, Canada and Australia, *defines mergers or amalgamations as the merger of two or more previously separate institutions into a single institution*. The institutional changes include the abandonment of existing forms of governance, change in institutional norms, objectives and academic programmes, as well as the modification of organisational procedures. Mergers denote radical change that only seldom occurs without also causing disruption. This change usually takes time to find its final form, and thus it is nearly impossible to say, when a merged organisation becomes completed (Huotari & Kalalahti 2017, 27). According to Mintzberg (1983, 293), structural transitions often lag the new conditions that evoke them. Structural change is difficult, necessitating rearrangements in established patterns of behaviour, so there is a tendency to resist it. Resistance explains many of the dysfunctions found in the structures of organisations: the organisational structures may be consistent, even when they have outlived the conditions that supported them. (Harman & Harman 2003, 30–31, 42.)

Several types of mergers can be discerned. Firstly, *integration mergers* occur between HEIs with alike academic areas; *diversification mergers* between those with different but preferably complementary areas (Virtanen 2008, 63). Secondly, in a *consolidation merger* two or more HEIs of similar size come together to form a new HEI, whereas in a *takeover merger* a smaller HEI is taken over by a larger one. Consolidations take more effort and time and involve difficult issues. Takeovers tend to be simpler, with smaller HEIs often being absorbed as faculties, departments or other units of larger HEIs. For political reasons, takeovers are often publicly presented as consolidations. Surprisingly, studies show that mergers are not a marriage of equal partners: the larger the differences (in size, programmes offered etc.) between the HEIs involved, the greater the probability that the merger will succeed. Well-planned and sensible merger efforts appear to be largely successful, even if the merger proposals were at first strongly contested. Most successful mergers take place between HEIs physically not far from each other. It seems possible to save on resources and infrastructure only in these kinds of mergers, while the greatest problems occur when the distances between institutions are largest and large cultural and academic differences exist, unless in diversification mergers the HEIs were strategically intended to complement each other. Thirdly, mergers occur both as *forced* by external instigators and *voluntary* by the participants, although according to Skodvin, most are either forced or a combination of forced and voluntary. The voluntary mergers are usually more successful than forced ones. Mergers occur, because the instigators and/or participants think it is more advantageous than disadvantageous to create larger units from and within HEIs. According to Virtanen (2008, 57), mergers are often justified and motivated by claims that bigger and multi-/inter-/cross-disciplinary HEIs could better assure efficiency, quality, content and international competitiveness. Reasons for *university-initiated* mergers include resolving

financial exigency to avoid closure or bankruptcy, to strategic reasons, including ambitions to improve universities' position in the higher education hierarchy and market. The main reasons for *state-initiated* mergers are to restructure part or the national HES. The main force behind a merger is always assumed gain: administrative, economic or academic benefit, although these gains are difficult to be reliably proven or measured afterwards, and the impressions experienced are mixed. According to Kyvik and Stensaker (2013, 328), five structural factors in the merging partner HEIs seem to affect the outcomes of mergers. These include the number of merging HEIs (two versus more), same size versus unequal size HEIs, single sector versus cross-sector HEIs (universities merging with other types of HEIs), similar versus different academic profiles of HEIs, and the geographical proximity of HEIs (the distance between the merging HEIs). (Skodvin 1999, 66–78; Harman & Harman 2003, 29, 31–32, 34, 42.)

Divisions of universities and other HEIs (or their subunits) into new HEIs and units usually occur when organisations have substantially grown. As with many university-internal reforms, as the HEIs have become more complex with new tasks and/or units, they are divided, supposedly to better manage this complexity, which can occur either horizontally (i.e. a distribution in many units and sub-units; or faculties and schools into independent HEIs), vertically in different management levels (like central administration versus disciplinary/local administration) or geographically (geographically spread units). Horizontal division of larger units into several parts also occurs especially, when some of these parts are expected to grow substantially in the future, for example when they represent a new, fast-growing discipline (cf. Mansikkamäki 2010, 35–39). The classical filiation of universities is often also a case of geographical division: as a faculty or school etc., affiliated to older university located in another city, keeps growing, it often becomes, through division, the basis of a new, independent university or HEI, which in turn takes – or at least applies – its organisational model from its parent. (Skodvin 1999, 72.)

The lessons concerning the mergers and divisions of universities include a discovery: the organisational structures of higher education may sometimes also 'change level' from HEI to HES or from HES to HEI. The first case occurs in classical filiation and divisions described above, when an individual and/or affiliate unit of a HEI (as a part of that HEI) is promoted to an independent HEI (thus becoming a part of HES). The second case occurs in a takeover merger, when a smaller HEI like an independent school (as a part of HES) is taken over by a larger university so that the former school becomes a unit (thus becoming a part of HEI) of the internal organisation of the university. Hence, from the perspective of organisational units of higher education, the HEI and HES levels seem to be interchangeable to a limited extent, and both of these levels must be studied while studying the organisational structures of HEIs.

2.4.4 University Organisations Resisting Change, Constantly Expanding and Hardly Dying

Universities are old institutions that evolve slowly and bring with them the weight of tradition and their historical origin: they follow largely institutionalised rules that limit the scope for discretionary behaviour (Bonaccorsi & Daraio 2007, 9). University structures seem to have the ability to maintain the *status quo* and resist at least the weaker attempts to change. Smooth functioning of the institution is expected from the administrators, who are not rewarded for doing things differently, even though it might prove more effective than the established routine. Any change is a lot of bother involving more problems and work in addition to what is already expected. Administrators are often unable to lead change, even though significant innovation in HEIs/HESs cannot occur without at least support from administrators. It can be concluded that administrators are lucky if they can keep a HEI flexible and receptive to new ideas. For example, new combinations or reorganisations of departments to promote multi-disciplinary studies oriented towards society's new problems are hard to achieve in university organisation, even though they are vital to the improvement of HESs. Bureaucracy itself in HEIs is a force towards conformity and conservative routine, which restricts initiative and questioning of procedures. Several older universities in Europe, from as early as the 17th century, have enforced their territorial monopoly by preventing others from being founded at all, preventing later-founded HEIs from becoming fully-fledged universities, or even forcing their competitors to close down (cf. Frijhoff 1996, 52–53). Durkheim (1977, 163–164) explains the nature of universities, the features of their organisation and their institutional 'behaviour' by their fundamental nature as corporations: the aim of a corporation is the exploitation of the institutional monopoly and the elimination of competition. (Eurich 1981, 46, 100–102.)

Regardless of the methods of their procreation, universities have historically been in constant period of growth into larger and more extensive institutions, limited only by major wars and economic recessions. Very few universities seem to have died out completely: in the long history of European universities, only the Napoleonic and Second World Wars have caused 'deaths' of universities and other HEIs as a wider phenomenon (see 4.4 and 4.5 for details). Otherwise, their population just keeps on growing. Also individual universities and HEIs seem to be mainly growing, both in terms of organisational structures and disciplines. The number of disciplines grew enormously especially during the 20th century (Ketonen & Vanttaja 1995, 9). The largest changes in the structures of higher education came about during the same time, because of public demand and growing numbers of students applying, from the massively growing numbers of people entering post-secondary HEIs in the late 1960s and early 1970s, when the university as an institution for the elite only was replaced by a university for the masses, all across Europe (Eurich 1981, 133). It is relatively simple to establish new universities and HEIs, and new units within their organisation, based on the national and the HEIs' own decision-making. However, once such

HEIs and units are founded, it is hard to discontinue them later, even when their requirement or reason is no longer valid. In such cases, the units alter their objectives or are merged with larger HEIs and/or units. Lampinen (2003, 9) sums this up in that the expansion of universities is nearly always additive in nature: new ones are founded, older ones expanded and differentiated, sometimes also merged with one another. But it is extremely rare that once established, universities or even their units would be completely shut down. Still, in terms of numbers and despite their tremendous expansion, after the first decade of the 21st century, universities have become a minority within all HEIs in the EU. Though there are exceptions (like the 1992 British reform of reinventing the polytechnics as universities), it is the non-university sector currently expanding and producing the institutional diversification, whether designated as public or private in its ownership and financing. These new forms of HEIs have enabled the rapid quantitative expansion of higher education, since the universities themselves in many countries displayed a degree of inertia and unwillingness to adapt to emerging socio-economic needs. Since 1990, this pattern has marked such diverse HESs as Austria, the Czech Republic, Denmark, Finland, Germany, Poland and Portugal. These developments have been specified in a number of research reports (cf. Gellert 1993a, 9–10, 17; Rekilä 2006; Huisman & Pausits 2010, 9–10; 176; Neave 2011, 61–62).

2.5 The Opposing Claims of Convergence and Divergence of Organisations

According to Teichler (2008, 352–353; 2009, 157), since the 1960s and likely also in the future, *a key theme of higher education research is: to what extent and according to which dimensions, is the overall pattern of institutional higher education elements homogeneous or diverse?* The elements include sectors of HEIs, individual HEIs and their organisational (such as departments and research units) and functional (such as study programmes) subunits within the HES. The dimensions refer to the interplay of the elements as whole entities versus their parts (subunits). How does this configuration change over time? What are the causes for homogeneity or diversity, and for changes? What are the results of any given configuration, for the overall quality, relevance and efficiency of education and research? My research subject is at the heart of these contemplations, which makes this a paramount matter for me.

Comparative higher education research studies, compares and classifies HESs in terms of governance and policy, to see the extent to which power lies more at the level of the state government, national ministry, multi-campus system, faculties within universities, or professors in departments, chairs or institutes. It is thus prudent to look at the relationship between HEIs and the nation state, as well as beyond the nation state, to adequately address also the global activity of local HEIs (Rhoades 2003, 32–33). Globally, the reorganisation of universities' traditional organisational structures seems to be

happening at an ever faster rate. Since the Second World War, the change in the environment of universities has accelerated. In the globalized world, national HES reform policies seem to share joint objectives irrespective of country: productivity related to funding, professional management, engagement with society etc. In the age of ranking lists, the institutional political environment of universities is thus claimed to be similar and to create similar pressures in most countries. According to Abazi et al. (2010, 43–44; see also Amaral et al 2003, 279–280) regarding the HEIs' institutional responses to global forces, the primary question is of homogenisation versus diversification. Major threads in the research literature support the homogenisation thesis that posits the emergence of institutional and organisational similarities, as well as the inevitable of decreasing diversity; examples include the harmonisation and standardisation efforts of the European Bologna process and the emergence of a standard model for HEIs as global players. On the other hand, many scholars point out that several HEIs seem also to diverge from these patterns and play against uniformity, even if it means missing out in the global game.

In terms of organisational development of HEIs and HESs, research has thus produced two opposing claims. Firstly, *the convergence claim is that the universities' organisations and HESs are converging into increasing homogeneity*: a conformist response to the growing international competitive pressures and common institutional demands they compete and converge to standard structures by adopting similar, effective-proven organisations, policies and organisational outcomes, while at the same time also abandoning the non-legitimate ones (which then prunes diversity) in order to succeed above their peers (for reference, see DiMaggio & Powell 1983, 148–156; Hannan & Freeman 1989, 93–95; Kuoppala & Marttinen 1995, 46, 83–101; Skodvin 1999, 74; Houtsonen 2002, 52–53; Morphey & Huisman 2002, 492–494; Lampinen 2003, 65; Kankaala et al. 2004, 5, 15–21; Hannan 2005, 59; Levy 2006, 144–145; Rekilä 2006, 174; Maassen & Olsen 2007, 9, 16; Sipilä 2007, 105–110, 182–184; Aarrevaara 2008, 158; Scott 2008, 152–153; Smith & Adams 2009, 252–255, 265–267; Hyryläinen & Viinamäki 2011, 7–19; Peters 2011, 20–30; Viljamaa et al. 2011; Erkkilä 2013, 13; Pietilä 2014, 305; Nokkala 2014, 128–129). Secondly, *the divergence claim is that the universities' organisations and HESs both need to diverge and are seen to diverge, become more complex, specialise and functionally diversify*: in order to succeed the universities are claimed to create and adopt research profiles based on their own strengths and to adapt themselves to local circumstances, cultures and perspectives, in order to find their own 'niche' in the universities' division of labour (for reference, see Hannan & Freeman 1977, 946–947; 1989, 94; Clark 1983, 187; 1993; Gellert 1993b, 244; Kivinen et al. 1993, 258; Moscati 1993, 77–78; Välimaa 1997, 15; Williams 1997, 104; Fuller 2000, 94; Lampinen 2003, 65–67; Rekilä 2006, 174; Bonaccorsi & Daraio 2007, 4–5, 17; Olsen 2007, 39, 42; Scott 2008, 177; Teichler 2008, 349–350, 360; Coate & Mac Labhainn 2009, 202; Reichert 2009, 8–9; Guri-Rosenblit 2012, 58–59; Erkkilä 2013, 13; Zgaga et al. 2013, 33–38; Brennan et al. 2016, 115–116). Even if not all of these claims concern just the

organisational structures, but also other aspects of their organisation, the structural issues are at the heart of the matter, and it is thus paramount to have a deeper deliberation of both of these essential claims.

2.5.1 Isomorphism and the Convergence Claim of University Organisations and HESs

The concept of *isomorphism* is suggested to capture best the process of homogenisation. It is described as forcing one unit in a population to resemble other units facing the same environmental conditions (DiMaggio & Powell 1983, 149). Two types can be discerned: *competitive isomorphism* concentrates on market competition, niche change, and fitness measures, a view relevant for those fields where open competition exist. The alternative, *institutional isomorphism* means progressive convergence through imitation: as organisations compete for resources, political power and institutional legitimacy, i.e. for social and economic fitness, their common norms in this competition drive them (as mentioned in 2.2.4 and 2.4) to imitate one another and adopt similar structures and practices. (Maassen et al. 1993, 147.)

Institutional theory distinguishes between three types of isomorphism: coercive, mimetic and normative (DiMaggio & Powell 1983, 150–154). *Coercive convergence* stems from the norms, laws or political influence of an external authority, like a nation state or some supranational organisation, and represents the pressures to conform, exerted through standards and regulations. For example airlines must obey stringent safety rules which lead to a uniformity of structure. *Mimetic convergence* is propelled by uncertainty that results from imitation: organisations copy the approaches of successful competitors, because they associate with it the success, but also to convince others that they too are at the cutting edge of best practice. Hence the popularity of ‘benchmarking’. *Normative convergence* results from the influence of professional expertise and widely accepted values and norms. Contemporary organisations are dominated by experts, who bring their shared professional norms into decision-making. The theory claims that due to these three pressures, in time all organisations will resemble one another. (Mintzberg et al. 1998, 294–295; Morpew & Huisman 2002, 496; Lampinen 2003, 65; Smith & Adams 2009, 255.)

According to Maassen et al. (1993, 135, 147–150), the case of the Netherlands until the early 1990s demonstrates that even when the diversification of HES’s structures is the explicit objective, a greater convergence might result instead. Recent studies (cf. Viljamaa et al. 2010, 100–102; Kasanen et al. 2013, 29–30) comparing research policies in Europe claim that in countries, which have undertaken structural reforms for their HEIs, the average size of organisational units within those HEIs has grown while the number of units has decreased (mainly through mergers) and the HEIs’ autonomy has increased. Despite increased autonomy, traditional and specific national features, an even stronger international and global institutional convergence is claimed to appear in the HEIs of these countries.

According to Pietilä (2014, 306) and Piironen (2016, 73–75), *ranking lists* of universities also act as factors leading to the convergence of universities in many countries, since today all universities must at least acknowledge the rankings. They are efforts of measuring the vertical diversity of higher education by ranking universities (and sometimes their subunits and other HEIs) based on various data, built as indicators demonstrating their relative ranking. Rankings draw attention, since they seem to be telling the truth behind the scene, causing praise for the winners and blame for the others. The mix of somewhat valid measurement and somewhat arbitrary judgement matches the *Zeitgeist* of a competitive environment in higher education. Amidst the difficulties of measuring quality, even dubious measurements can be taken seriously as a basis for allocating funds, or for choosing HEIs as a place of study or research cooperation, etc. However, according to critics, ranking lists do not provide neutral information, but deliver data with a fixed ideological set about the desired character of HESs: academic quality depends on the individual university/HEI; a steeply stratified HES is desirable; horizontal diversity is irrelevant. According to this critique, rankings praise the gospel that only the apex matters or that only vertical stratification is beautiful. Rankings do not reinforce open competition for quality improvement, but rather have an anti-meritocratic impact of stabilising the power of the traditional establishments in HESs. They also elicit a dysfunctional adaptive behaviour of striving for improvement according to the measures employed while neglecting valuable activities that are not measured. They reinforce academic drift, in terms of imitation of the activities, structure and norms of prestigious universities and HEIs at the apex. This occurs when universities grow alike over time as smaller, newer and less comprehensive HEIs become like their larger, older and more comprehensive peers, and the homogeneity within HESs thus increases. However, it is generally assumed that a completely homogenous HES cannot work – but such a mode has never existed (Teichler 2008, 370). (Morphew & Huisman 2002, 492–494; Teichler 2008, 357, 371–372; Raivio 2013, 124; Erkkilä 2013, 5.)

I can thus conclude that the organisational convergence claims concern three levels in higher education: 1. the global network level of higher education (hereinafter referred to as GHEN), defined as the global network of national, single-country HESs (and a few international HESs, see 5.6); 2. HESs, composed of interactive universities and other HEIs; 3. individual universities and other HEIs, composed of their internal units. Teichler (2008, 350, 355) calls the second a *macro level* and the third a *meso level*.

2.5.2 Divergence and the Diversification Claim of University Organisations and HESs

Divergence in higher education can also have different meanings and be subjected to multiple levels. A key distinction of institutional diversity is between *internal diversity* within HEIs, and *external diversity* between HEIs, although these are connected in relation to institutional responses (Reichert 2009, 15,

150–152). External diversity relates to divergence of institutional patterns and organisational structures of the HESs at the macro level, and internal diversity to patterns of the HEIs at the meso level. At the HES level, there is a difference between *vertical diversification* that depicts *formal* elements of the HEIs diversity related to rankings, reputation, attractiveness, academic drift etc., and *horizontal diversification* that depicts *informal* elements related to the HEIs institutional profile creation, academic programmes etc. At the HEI level, diversity can refer to organisational elements of the HEIs, the diversity within the HEIs and their internal subunits (called internal diversity by Huisman, intra-institutional by Teichler), the composition of the student body according to socio-biographical characteristics, or the dynamics of the knowledge system. In my work, diversity at the HEI level focusses at the first two. (Teichler 2008, 357.)

Regardless of the level concerned, the diversification claim holds. Several cases of HEIs being diversified as their environments changed can be found even from decades ago: for example New York University in the 1960s (see Walford 1987, 135–136) and Aston University in England in the 1980s (ibid., 1, 38–123) are striking examples of a HEIs' capacity to totally transform their operating philosophy and organisational structures in just a few years in order to adapt to new environments in the Durkheimian sense (see 2.2.1). In the United States, sufficient diversity of the HES is even seen as a prerequisite in ensuring that higher education can answer the needs of society in a flexible way (Kivinen et al. 1993, 258). In Europe, the shift of focus from diversification of HESs through institutional types towards vertical diversification through reputation hierarchies of individual HEIs and their subunits began in the 1970s, and produced a visible trend in the 1980s, even though fundamental controversies about the desirable extent and modes of diversity never ceased to exist (Teichler 2008, 361).

Recent studies describe how diversification is seen to increase. According to Aarrevaara et al. (2015, 112–113), in six of the eight European countries compared (Austria, Croatia, Finland, Poland, Romania and Switzerland), vertical diversification from a unitary HES (of equal-status HEIs only) to a binary or a two-tier HES (of HEIs with two or more status categories), via the introduction of a polytechnic or equivalent sector, has been a major driver of change for the structures of higher education, as well as *new public management* (hereinafter referred to as NPM). However, in Germany and Ireland with earlier polytechnics, this was not the case, since the binary model had already been institutionalised before the NPM trends appeared. Hogan (2005, 55) concluded on United Kingdom that the trend of development of the universities' organisational structures is towards on average smaller, more managerial structures not based on sovereign disciplines. Diversity is claimed to increase with a smaller number on average bigger units, and departments with formal structures across more than one HEI. These are alternatives to the 'single discipline' academic department, once the key building block of most academic structures, and a move to larger management units, usually schools (Hogan 2012, 130). Altbach (2002, 2) claims

that differentiation and massification of universities were the main hallmarks of the end of the 20th and the beginning of the 21st century. I can conclude that the organisational divergence claim concerns the same three levels within higher education as the convergence claim did: individual universities and other HEIs (meso), national and other HESs (macro), and the globalized network level of higher education.

2.5.3 Allomorphism as an Attempt to Reconcile the Opposing Claims

Kallo et al. (2015, 17–19) point out that in recent years, ‘time and space’ have become internalised themes in comparative education research: a consensus seems to exist in the increasing leverage of the transnational organisations and governance also on the national contexts of higher education, while the dissenting claims on the nature of this leverage remain: whether it leads to hybrids and increased diversity or a globally more structured agenda and culture. According to Vaira (2004, 483, 485, 489; see also Ursin & Saarinen 2013, 9) it is possible to reconcile the opposed interpretations concerning the organisational outcomes of globalization. Even as the convergence claim emphasises the homogenisation processes and isomorphic change, and the divergence claim on the contrary emphasises pluralistic, idiosyncratic and localised strategic responses and heterogeneity to globalization processes, Vaira argues that these perspectives could be integrated in one offering an interpretation of change dynamics, based on the concept of *organisational allomorphism*. It claims that although organisations adapt or translate institutional patterns in the face of their formal structures, arrangements as well as social context, it is possible to identify a common set of institutionalised patterns or institutional archetypes, which structure the organisational arrangements and behaviours. The HEIs are deeply infused with values derived from their historical pattern of foundation, which has been reproduced almost intact in their core features up to nowadays. These features are now challenged by globalization processes, which tend to redefine them on a whole new basis and are clashing with the traditional institutionalised values. Notwithstanding the similar historical structural and cultural features of HEIs, they are also (in HESs) embedded in a national political, regulative and governance system, which shapes their structural and organisational features. This system too is challenged by globalization’s imperatives, entailing the reshaping of its role, relationships, policy-making, priorities and structure of governance related to higher education.

Because of institutional and competitive pressures, nation states incorporate the global institutional imperatives and archetypes in their HES policies, exerting their coercive pressures on HEIs. This entails a more articulated allomorphic structure at the local-nation level. It finds its expression in higher education reform policy and its governance arrangements restructuring. But allomorphic change occurs also at the local-organisational level, by the incorporation, adaptation and translation, in their settled organisational arrangements, of new policy frameworks bearing the new institutional imperatives and

archetypes. According to Vaira, the result of this chain of changes is that HEIs are neither becoming strictly homogeneous and isomorphic at a global level, nor are highly differentiated and polymorphic at the local-organisational level, but rather they could be local variants (not different forms) of the same institutional archetype. However, Vaira points out that his framework on allomorphy needs to be debated, refined, improved and tested empirically, and that the European region could be a viable test bench to put this framework to work and to test its potentialities and limits. My research functions as one such empirical test, and the results are elaborated in this light (see 6.2). (Vaira 2004, 502–503, 506.)

2.5.4 The Universities' Organisational Structures in Relation to the Convergence and Divergence Claims

According to Hannan (2005, 53, 55–56), debating whether diversity in organisational forms is high or nearly absent has not proved to be illuminating, because the answer depends on one's perspective. For example, if the one asks whether the forms of life on Earth exhibit diversity, it could be concluded that there is little diversity, because nearly all known forms of life are based on carbon, or that there is enormous diversity, because the full range of life across plants, animals, fungi, bacteria and the microbes takes on incredibly different forms. This being said, Hannan suggests that social scientists generally understate the diversity of organisations in society, because our intuitions about the organisational world reflect impressions drawn from the experiences of large, long-lived organisations, which are extremely unusual – although just universities are notable representatives of that small group. The world appears to be characterised by great diversity in organisational forms, structures and practices. The lack of an established empirical yardstick for stating whether the existing level of diversity in a given population is 'low' or 'high' makes this claim subject to debate. Debating the extent of diversity in the abstract has less value than establishing the dimensions of diversity that have relevance and measuring the variation on these dimensions through empirical studies. In order to establish the relevant dimensions of diversity to acknowledge in my research task, based on the conclusions of 2.5.1 and 2.5.2, I argue that both convergence and divergence claims concern the three already mentioned levels within higher education: the *global level*, as the ever more globalized international network of higher education, composed of mostly national HESs; the *macro level* of HESs, composed of individual universities and other HEIs; and the *meso level* of a universities and other HEIs, composed of their internal subunits. Still, because of my research task, out of these levels, I am mostly interested in the developments at the meso level.

Several empirical studies have tried to outline the converge versus divergence developments in European HESs and HEIs. Teichler's (1993, 31–34) analyses on HESs in Western Europe show clearly that their patterns did not converge or become more similar between 1975 and 1987, although this might have been the case later, especially after the European integration in this field began to have a real effect at

the end of the 1980s and early 1990s. Paradeise et al. (2009a, 88, 93–96; 2009b, 197–198, 225) did a comparative study of HES reforms in the United Kingdom, the Netherlands, France, Italy, Germany, Switzerland and Norway, and on how organisation of universities changed in the period from 1984 to 2009. They concluded that universities became clearly more hierarchically integrated over the period, and that the convergence claim in HES reforms is still at the very least partial and premature: European HESs remain far from converging towards a unified pattern that would erase borders, with the help of European level policies and intergovernmental actions. Instead, they observed both convergence and divergence: the relaxation of tight rules in reform measures ensured diversification, but at the same time the expansion of reform incentives encouraged HEIs to imitate successful arrangements by pioneering institutions. However, it is indistinct as to what extent these findings and their convergence versus divergence observations dealt specifically with organisational structures and to what extent they dealt with processes and other types of activities outside the scope of my research. Still, these findings are in line with those of Teichler (2008, 375), according to which the notion of the virtue of an increasing vertical diversification has stronger advocates outside than inside Europe, but European higher education is increasingly exposed to external claims that steeper stratification of the HESs is the only way to their increased quality, relevance and efficiency. According to these claims, it seems to be only a matter of time when European HESs will have lost their divergent features and have been replaced with conformist systems in line with global trends. Still, Teichler believes instead that it is plausible that the globally prevailing notions can be viewed as possible, but not as superior options for HESs all over the world, and that there are signs of both dysfunctions of the dominant trends and feasible successful alternatives.

Vaira (2009, 135–136, 142, 151) has produced the most plausible parsing of the development of the HESs. Accordingly, after the Second World War, western HESs faced the transition from an elite system to a mass one, which entailed long-term changes of modernisation and rationalisation, deeply redefining the HESs' policy, governance, structure, organisation and goals (see also 4.5.1). Vaira identifies four stages characterising HESs in Europe since 1945: 1. *Dimensional expansion* (1945–1965): higher education coincided with university, imbued with elitist values and structured for a small portion of the population. At the same time, HESs faced a phase of growth in the social demand for education. The response was to expand the universities dimensionally by increasing the number of academic staff and the number of courses and curricula. 2. *Rationalisation by structural diversification* (1965–1985): The dimensional growth of universities had structural and financial limits; over a certain threshold in the number of students, the system could not respond effectively, and the costs of managing it grew fast. The solution was the structural diversification of HEIs. Thus from the 1970s onwards, many European HESs were structured as binary models (of universities and other HEIs, like polytechnics, see 4.5.3). 3. *Consolidation of binary system and entrepreneurialisation of institutions* (1985–2000): While the binary

HESs were becoming institutionalised and diffused, changes in the economic environment, the fiscal crisis of the welfare state and the market ideology pushed towards a new round of changes in HESs (see 4.5.6). The 1990s brought reforms to change binary HESs into unified ones (like in the United Kingdom and Sweden) or university-dominated HESs into unified ones (like Spain and Italy). Reduction of state regulation and funding, institutional autonomy and HES evaluation created a competitive environment for HEIs, which responded by diversifying their organisational arrangements. The HEIs thus displayed a higher degree of organisational diversification, while the HESs' structure remained largely based on the binary model. 4. *Trends towards unified and differentiated-stratified systems* (2000–): Since 1999, the Sorbonne-Bologna declarations led to a design of HESs that pushed towards an unprecedented convergence, stemming from the effort to build a European area of higher education, which affected most European HESs and oriented them towards a unified and stratified system structure (see 4.5.7). The Bologna process created an institutional environment with new demands for both HESs and HEIs. HEIs are changing by an endogenous logic towards an organisational model leading to blurring between university and non-university HEIs. Competitive and institutional pressures and processes are also strengthened by the international system of rankings, paralleled by national ones. It is the conclusion of Vaira that such pressures have entered HESs and HEIs into a structuring stage that is contributing to the tendency to overtake the previously diversified HES structure and HEIs and push them towards unified systems, where HEIs get more structurally and functionally differentiated and stratified.

According to Teichler (2008, 351–352), many analyses of higher education become lopsided because of a widespread belief that a high degree of vertical diversity in institutional configuration is desirable and therefore, the discourse does not raise the question whether this judgement is supported by evidence. Teichler further points this out as a challenge for higher education research in general. Regardless of these often-referred-to theories, there has been a very limited amount of empirical research on the organisational structures of universities. Maassen and Olsen (2007, 3–22) agree by pointing out that the universities at the European level are over-debated and under-investigated. The EU has made universities into a political priority, but actual Europe-level reform proposals based in research results with respect to universities are 'thin'. Solid comparative higher education studies on the effects of European integration on universities are rare. Performance is usually attributed to organisational properties of European universities as a whole, rather than being documented, based on a systematic analysis of the widely varying organisational configurations called 'universities'. Therefore, the most important question and challenge for Maassen and Olsen is whether and how the European universities are changing. More precisely, they would like someone to answer their research question by mapping the actual changes in the European university: how much, and what kinds of change have there been in its organisation and governance? Have the ways in which the university is organised, governed and funded been

revolutionised or modified, or has rhetoric changed more than practice? (Gornitzka et al. 2007, 181.)

I assumed the task to answer the call of Teichler, Maassen and Olsen. *I aim to provide new information on the convergence and divergence claims in relation to the universities' organisational structures particularly at the meso level, and to empirically describe at the level of configurations of their organisational units, what actual changes have occurred in the well-established European universities as a function of time.* All around Europe, there is a significant yet systemic variation in the organisational structures of universities, owing to their historical university models and HES models followed, so I will study whether the universities' affiliated HES models have diverse effects on the organisational changes. Even as such an approach does not tell much about the activities of universities outside the scope of their formal organisation, according to organisational theory, there are links between structure and activities, and by focussing on the formal structures only, it is possible to achieve more commensurable analysis and formalisations on a large number of universities, which would not be feasible at the activities level.

3 The Comparative Research Design and Methodological Choices

Comparison is an independent method in research, although it is related to inductive and analogy based inference rules and can be derived from them. It is used to explain and/or interpret the differences and/or similarities of objects being studied in a systematic and comprehensive way. The aim of comparison is to find generalisability or specificity in the objects being studied. According to Hyyryläinen and Viinamäki (2011, 226–228), comparison is an essential way to form scientific theories in administrative sciences. *Comparison can be defined as a way to acquire information through the parallel study of objects, in which the similarities and differences of these objects are perceived, interpreted and explained to produce useful information.* However, the data used in comparisons are almost never optimal. On the other hand, only by comparison it is possible to generate theoretical information, from which the cultural differences have been identified and removed. The data thus obtained in comparative international comparisons are of vital significance for improving theory. *A comparison requires comparability; i.e. a process that produces either sufficient similarity to study differences, or sufficient differences to study similarity.* Comparison is thus related to statistical, experimental, heuristic and case study research methods. It is a kind of ‘in between’ method on a scale with statistical, hypotheses-testing quantitative methods at one end, and case study qualitative methods aimed at gaining a deep understanding of single cases at the other end. (Salminen 2000, 13–14, 32; Aarrevaara 2008, 158.)

The classic ideas of administrative comparison are found from the works of Weber, Durkheim and Riggs. According to Salminen (2000, 14–17; see also Weber 1949, 90–106, 130; 2012, xiv–xxviii; Jensen 2012, 85–89), Weber represents ideographic comparison aiming to understand cases historically, in building typologies, comparing them to empirical data and thus building new hypotheses and analogies. This incorporates causality, but with the provision that the phenomena or cases being studied are explained from several causes, which also might not be unambiguous or exhaustive. Durkheim and Riggs represent comparison building on classifications, divisions and ideal models. Starting from ready-defined concepts, Riggs bases his comparisons on the dysfunctions of administrative changes and emphasises three principles: 1. comparisons should be nomothetic and seek generalisations; 2. comparisons should be empirical rather than normative; and 3. comparisons should be ecological rather than non-ecological, taking into account also both the environment and the administrative context. To Riggs, comparability requires shared societal functions without which the comparison cannot work nor can the organisation be successfully changed: a reform founded on structures and practices foreign to the environment of the organisation itself is always at risk of failing, because those structures and practices do not function as intended in a different environment. Methodologically, Weber represents subjectivism that sees social

reality as being individually constructed and thus not deducible from universal laws, whereas Durkheim and Riggs represent objectivism that emphasises causality and measurability. Subjectivism aims to 'understand' with qualitative methods, while objectivism aims to provide statistical explanations with quantitative methods. I must take both of these points of view into account in my empirical research.

Theisen and Adams (1990, 281) classify comparisons into sub-categories: 1. Analytical, description of roles or specification of cause and effect -relations; 2. Descriptive, description of phenomena, conditions or relations with variables; 3. Evaluative, judgement of the value of a given programme or technique aiming for interpretations for decision-makers; and 4. Exploratory, generating new hypotheses or questions, exploration of relationships and functions. Out of these, my research is mainly descriptive and somewhat exploratory. According to Noah (1984, 552), there is nothing 'mere' about the tremendous amount of descriptive effort that has to be exerted to acquire systematic, parallel data on educational systems that differ in the particulars of their structure. Because the non-descriptive parts are more difficult to produce, they are also more elaborate with more important implications. Noah (ibid., 551) also points out that such comparisons can help us to understand our past better, locate ourselves more exactly in the present, and discern our futures more clearly. Such contributions can be made through work that is primarily descriptive, or seeks to be analytical or explanatory; one that is limited to one, few or many countries; one that relies on non-quantitative as well as quantitative data and methods; and one that proceeds with explicitly formulated paradigms or in a less formalised manner. This suited my approach: with the comparative method, I was able initially to leave some options open and make those decisions later, depending on what came up during the research process. According to Ahonen (2002, 68) it is necessary to keep the criteria of any comparison somewhat open even during the actual comparison, because closing them beforehand might lead to a dogmatism that will hinder the outcome.

The problem faced by comparative studies of organisations has been one of deciding precisely which characteristics of the entities to compare (Holdaway et al. 1976, 115; Bleiklie 2014, 382). The question of comparability in concepts, data and methods is crucial. Zelditch's (1971, 271–273) criteria for comparability is *'two or more units are compared with each other in relation to the same concepts or factors, which have an identical meaning for these units'*. However, comparison as an empirical method normally cannot use such rigid definitions, because any comparison spanning several countries may find only just about adequately similar common concepts or factors shared by the units being compared, used approximately in the same way in different countries, in order to have at least a sensible research setting. This can be considered to be the minimum requirement for comparability. Also, Smelser (1976, 241–243) has listed criteria of comparability. Firstly, *the concepts must be defined at a level general enough to be usable in different systems. The objects of research and their nature must be*

acknowledged already from the time that the concepts are being constructed. The second criterion deals with the empirical application of the concepts: *the variation found in the objects of research must be identical enough to make the mapping of differences and similarities a fruitful task.* If the concepts are chosen well, the comparison will be meaningful, but if not, the variation might become too great to be registered in a meaningful way, which does not create preconditions for building up generalisations from the results. A third criterion deals with the processing of the studied cases. *Comparability requires that the data have been collected and processed in a uniform way for each compared case. If the data were originally formed by using uniform criteria, all the better.* Of these criteria, the first ensures the validity, the third the reliability of the comparative research, while the second ensures both. Since compared objects can never be identical, it is enough that they are *equivalent* instead. Viinamäki (2007, 4–11) distinguishes three forms of *equivalence*: *conceptual*, *functional* and *structural*, all of which deal with the inference conditions that a scholar must take into account when comparing. These affect and delimit the possible interpretations of the studied objects. Conceptual refers to equal use and definitions for concepts used, functional to the equality of the same or similar functions being studied in different contexts or countries etc., and structural to the formal elements and structures of the systems being compared. For Viinamäki, equivalence is generally improved by extending the temporal period of comparison. According to Hyryläinen, in the end comparability depends most on the conscious choices of the researcher: a fitting choice of concepts ensures comparability. Most decisions in comparative research are then practical answers to problems that have risen from the research task, and can often be done even on an intuitive basis. Though decisions might be difficult to rationalise and justify, they may often still be just the necessary and right ones in order to carry out the research successfully. I decided to design my task so (see 3.2.2) that both Smelser's criteria of comparability and Viinamäki's criteria of equivalence were met in my empirical comparison. (Hyryläinen 2000, 130–133, 136, 140–143, 146.)

According to Bleiklie (2014, 382, 387–388, 390), researchers assume that HEIs can be internationally compared, even while realising that HEIs are diverse and operate within different national contexts. Notions about the HEIs are often based on narrow experiences of one's home country or on somewhat abstract salient features of the HEIs in internationally dominant countries like France, Germany, the United Kingdom and the United States, the ideals of which have historically served as attractive models and have been documented best in the literature. Findings on how various systems are organised are therefore often interpreted as deviations from a norm represented by a system, rather than being properly understood in terms of their actual national contexts. Given the growing importance of supranational actors with authority from member states, the role of the nation state as a major driver behind higher education change cannot be taken for granted anymore either. For Bleiklie, comparative research has three major advantages: First, when the number of units studied is increased, the opportunity for

generalisation increases. Systematic comparison enhances the potential rigour of a study, whether one does in-depth comparisons of a few unique cases or hypothesis testing of a large number of cases. The second advantage is knowing that culturally, politically and institutionally diverse places often challenge one's local and national superstitions. Hence comparative research helps to avoid being trapped by that local prejudice that tends to dominate specific locations, and improves understanding of the range of possible variation as to how institutions may be organised. It also provides a wider array of concepts and ideas, when research questions and ways to address them are formulated. Thirdly, working in multinational groups on comparative projects forces participants to think through and negotiate their theoretical positions. As the field of higher education research grows and knowledge about an increasing number of countries is available, it makes sense to move in the direction of more rigorous systematic comparisons. Most importantly, comparative research challenges our conceptual understanding of the topic under study, thereby challenging us to develop our conceptual understanding and theories further in ways that otherwise would not take place. Progress in comparative research is then a question of conceptualisation of what one compares, and development of concepts that can travel well.

From my research subject's point of view, it is vital to still ask, what is the added value that this arduous and demanding comparative method can bring to the analysis and understanding of the organisational structures of universities. Theisen & Adams (1990, 277) claim that comparative study suits HEIs and HESs well: even though it is not a precisely defined or conceptually clear set of methodologies, it is known to be at its best application in the study of objects in cross-cultural or international contexts, which my research topic inherently has. It also enlarges the framework within which one can view the results obtained in a single case, system or country; by providing counter-instances it challenges to refine one's theories and their validity in different societies; and, by providing parallel results, it can yield important confirmation of results obtained elsewhere (Noah 1984, 558). An extra 'bonus' recognised by anthropologists is included: comparative research releases us from the boundaries of our habits of thought and shows us the gamut of patterns possible in human interaction (Etzioni 1975, xiv). This matches also with my own research experience: in my university data, I constantly ran into new organisational structure features I could not have imagined beforehand.

3.1 The Research Problem and Research Setting

To summarise Sartori's (1984, 44–46) *ladder of abstraction* theory, a researcher must choose between either the applicability or exactness of his/her concepts, because it is difficult or impossible to achieve both at the same time. Both are prudent choices, provided that one acknowledges their limitations. The

abstraction level of the conceptualisations used must then always be based on the application field and purpose of the research. In comparative research, conceptualisations can be either universal, general or contextual. Universal concepts lead to wide coverage but have limited applicability in organisational comparisons, since the number of cases with commensurate variables to be compared is not large enough for proper quantitative methods. On the other hand, contextual concepts lead to context linkages with minimal empirical coverage and as such are often not useful either. Sartori then urges the use of general concepts with middle-range theory in order to balance with both coverage and applicability in organisational comparison. (Sartori 1985, 241–250; see also Hyryläinen 2000, 136–138.)

According to Teichler (2008, 357–358), it is indeed possible to analyse HES/HEIs by establishing a map of the configuration of the system; first by naming categories suitable in identifying the coordinates of the system (like vertical vs. horizontal diversity, institutional vs. programme diversity), second by establishing the position of the institutional patterns and the extent they differ on the map, and third by analysing the institutional patterns with respect to the core functions of higher education, research and education. Then it is also possible to explain the causes of the configuration of the system and for its changes (according to the needs of society, characteristics of the knowledge system, the attitudes of the actors, politics, etc.) and deliberate the overall functionality of the configuration. In such a framework, internationally comparative analysis and arguments play a prominent role, because higher education is a macro-social entity, and comparison as the key method used to characterise phenomena in order to understand this entity, has to be internationally comparative. As my research problem, the nature and development of the organisational structures of European universities is thus operationalised, the coordinates of the system studied become the size and shape of the organisational structures of the universities. In order to establish the initial position of the institutional patterns, I will condense from existing historical research the general filiation and development of the organisational structures, based on the historical university models and grouped by the national HES models the modern universities have applied (entire chapter 4). For the third part, instead of trying to explain the causes of either the system or its changes, I am comparing system ‘maps’ with one another, to chart the occurred changes of the system: firstly, in individual universities as a series of maps from different years; secondly, in groups of universities affiliated with the same HES models; and thirdly, in the population of universities in my data.

Using Mintzbergian concepts, *a university’s organisational configuration is composed of the size and shape of the formal hierarchy of units belonging to the professional organisation*. Hence the strategic apex has ‘intricacy’ (the nature and complexity of the governing bodies and governance), the middle line has ‘height’ (the different organisational levels within a university), and the operating core has ‘breadth’ (the quantity and quality of formal organisational units within those levels). As covered in 2.3, support

staff and technostructure, often referred to as ‘administration’, mostly do not engage directly with the professional-run universities’ main tasks of teaching and research, even as they indirectly contribute to and support them. Of the other parts, the strategic apex often has direct functional connections to both technostructure and support staff, and the latter also often emulates in shape the combination that the operating core and middle line form together. But when the universities are viewed as a hierarchy of their main organisational structure units, carrying out the actual tasks of research and education, neither the support staff or technostructure parts of almost any university, are ever an actual part of that hierarchy. Besides, as the data really does not include systematic information about the technostructure or support staff parts of the universities (see 3.2.2), they are regrettably and intentionally demarcated outside the main analysis. Even as some recent studies (Whitchurch 2012; Rytberg & Geschwind 2017; Steinhardt et al. 2017) claim that in the 21st century, the boundaries between the scholarly professionals versus the administrators and other support staff have blurred, so that the latter could become more involved also in the daily practices of teaching, learning and research, this is not visible in my organisation data ending in the year 2013 (see 3.2), even as it seems that the ways to arrange the organisational structures of the operating core, middle line and strategic apex are becoming more varied just in the 21st century part of my study period. Amaral et al. (2003, 291–293) also demonstrated that, in coming to the 21st century, even as managerialism in universities were internationally seen to increase, in practice it did not impose itself uniformly, or even at all, in some countries, and did not produce a clear set of new management structures. Thus, with ample data on the operating core, middle line and strategic apex parts of the universities, the empirical comparison of institutional patterns is enabled, in a commensurate way and using a systematic method, through the configurations of the organisational structures of universities.

3.1.1 The Essential Concepts and Criteria Defined for the Purpose of Comparison

I will define the essential concepts related to organisational structure, university and Europe, as they are used in this work for the purpose of comparison. In particular *the concepts of Mintzberg that deal with organisational structure are used as the empirical criteria of comparison of the organisational structures of universities* and the results are presented in relation to these criteria (in chapters 5 and 6). For definitions of higher education institutions (HEIs) and higher education systems (HESs), see 2.1. Also *the modern 20th century national HES model adaptations of the historical university models* (see 3.2.2, 4.1, 4.5.3 and Appendix 2) *are used as a criterion of comparison, because they benefit the comparative analysis* by recognizing, elaborating and grouping many of the recurring structural features of both the contemporary universities of the data and the HESs these universities historically belong to.

Organisational structure in this work is defined in the university context, using the Mintzbergian

concepts already explained, as *the hierarchical configuration of the professional-run, academic* (meaning directly involved in the tasks of education and research) *organisation units of formal authority*, situated in the operating core, middle line and strategic apex parts of the professional bureaucracy organisation. The organisational structure so defined has size, shape, dispersal and differentiation as its dimensional attributes. *Size* in this work *refers to the number of members belonging to a university*, including the academic staff and students at all degree levels and also in external categories, but excluding the administrative and support staff (for more details, see 3.2.2 and 5.5.1). *Size* in this context hence does not involve the budget, geographical or physical extent of the universities' real estate etc. *Shape* in this work *refers to the configuration shape of the academic units* belonging to the professional organisation of a university, which can also be drawn as a Mintzbergian organigram interpretation (for details, see 5.5.2 and 2.3). These academic units can also be classified to many qualitative categories and they have various specialisation attributes (for details, see 5.2 and Appendix 3). *Dispersal* in this work *refers to the extent of organisational diversity* (as described in 2.5.4) *represented by the total number of academic units in the organisation structure* of the professional organisation of a university. A university's size (in its members value) and its shape (in its unit dispersal value) can thus be presented with numeric quantities: by counting together the number of academic staff and students for size, and the number of academic units at all levels of the professional organisation for shape. *Differentiation* (for details, see 5.5.3) in this work is defined as the overall differentiation of a university's organisational structures, as a combination of the aforementioned member size value and dispersal shape value. Furthermore, in its development, the organisational structure may *integrate* towards a more compact unit dispersal shape or *differentiate* towards a more dispersed unit dispersal shape (see 5.6 for details) and when juxtaposed and compared with two or more other organisational structures, these may *converge* towards parallel states and configurations of organisation or *diverge* towards different states and configurations of organisation (see 5.6 for details).

Universities are exceedingly complex, and have even been described as one of the most complex of all modern organisations, and therefore also most difficult to administer (Ross 1976, 159). This is not simply due to their size nor the details of organisational structure, but relates to the diffuse and often undefined aims that individuals and groups within and outside them hold for the institution. Because of their openness, determining their boundaries has always been difficult and sometimes appears to be quite arbitrary. Does a university include its students within its boundary? Its alumni? Academic staff during the summer? The spouses of students in university housing? It has been pointed out that individual persons are not enclosed within the boundaries of organisations, but only their certain activities and behaviours, many of which have relevance for more than one organisation simultaneously. Therefore, it has always been difficult to define which HEIs can be counted as universities and which not (Frijhoff

1996, 57–64). This is even more difficult in the contemporary world of ever more complex forms of higher education. In this work, I have focussed on universities rather than all HEIs, because the academic university institution is the principal legal entity through which most higher education functions have always been performed (Becher & Kogan 1992, 67). Also, the university tradition has been its most continuous just in institutions: masters and students, corporations and curricula, faculties, colleges, student nations, degrees, officials, buildings, ceremonies and the terminology. As such, characteristic of the Middle Ages as the universities are, even the individualistic modern world still has not been able to find anything to replace the them with. Hence, I have used the same legalistic definition of a university that the *European University Association* (EUA) applies to its member institutions, and which has roots in the history of universities: *Universities are defined as ‘institutions of higher education founded or recognised as universities by the public authorities of their territory and authorised by these authorities to confer the academic degrees of master and doctor’* (Neave 2011, 43–44). At the end of 2018, the EUA had 704 such individual full universities listed as its members (European University Association 2019, 25). (Haskins 1957, 21–24; Walford 1987, 126; Scott & Davis 2007, 95, 152–153.)

Because I am studying only European universities, and the borders of nation states change during the 50-year study period, also Europe as a precise area had to be defined. In this work, *Europe* refers to an *area which includes the traditional geographical and political territories belonging to it during the time period of my research*. This means that Turkey and USSR / Russian Federation are included, but for only those partial areas that geographically belong to Europe. Also included are Cyprus (geographically located in Asia, but for the Greek part a member of the EU) and the Canary Islands (geographically located in Africa, but belonging to Spain and the EU). Armenia, Azerbaidžan, Georgia and Kazakstan (belonging geographically mostly to Asia and only partially to Europe) have intentionally been left out.

3.1.2 The Research Problem and the Research Questions

I can finally formulate the research problem, research design and research questions exactly. To recap, I used Mintzberg’s ‘structures in fives’ middle-range research theory, representing the wider SCT and the organisational ecology perspective, to chart the European universities’ organisational structures and their long-term development. To requote Durkheim’s idea of universities as ‘living things’, I want to understand the nature and evolution of the metaphorical ‘anatomy’, that is the organisational structure of universities. *The research problem is then to study, how the organisational structures of well-established European universities have developed since the Second World War and in relation to the convergence and divergence claims*. Using Teichler’s (2008, 350) terminology, my analysis is focussed on quantitative-structural issues of higher education: the shape and size, the institutional *fabrique*,

structure and patterns of universities as HEIs and the HEIs as structure and patterns of HESs. Utilising the framework hitherto outlined and stipulations on the organisational structures of universities, I can formulate the following three research questions, of which the first and second are descriptive and the third is exploratory:

1. What are the formal organisational structures of well-established European universities and their long-term changes (organisational births, reforms, mergers, divisions, deaths) like since the Second World War, understood as Mintzberg's 'structures in fives' theory organigram interpretations of the unit configurations of their professional organisation?
2. How are these organisational structures and their changes visible in, and differ by, the national HES models – themselves reflecting the historical university models – the universities are affiliated with?
3. How do the observed changes reflect the theoretical claims of convergence versus divergence in organisational structures?

The research questions then led to the concrete methodological design of the research. From the outset it seemed clear that most conventional research designs would not be an effective solution in attempting to solve my research problem, but that a more creative approach was necessary. In the heart of any successful analysis was to find or to develop a system of accurate but simple, descriptive but systematic way to describe, categorise and compare the organisational structures (the units and organisation levels, configuration sizes and shapes) of many universities in various environments. It must be emphasised that the claims of convergence versus divergence are in this work studied only relative to organisational structures, even as the scholarly discussion regarding convergence and divergence of higher education encompasses a wider scope, dealing also with the operations and activities of HEIs and HESs. According to Peters (2000, 207), the achievements of organisation theory are greater in analysing large quantities of data on organisations belonging to different cultures, thus being able to form common 'basic concepts' for the analysis. Then even the analysis of exploratory data may not be problematic, as long as the researcher remembers to take into account the conditional nature of the findings and data.

3.1.3 Relevant Prior Empirical Research

According to Etzioni (1975, xi), social science research is often criticised for its lack of continuity; different studies employ different concepts and inconsistent measures. As a result, it is difficult to piece together the findings of various researchers which hobbles the processes of replication and accumulation.

The knowledge gained remains fragmented. This proved to be true also while I was looking for prior empirical research on the organisational structures of universities. There are a lot of case studies, but even after a very comprehensive search I found only a few extensive, comparative studies of universities, other HEIs and HESs exploring several countries. A brief overlook of such research is prudent.

Starting from empirical comparisons of HESs, the Carnegie Commission on Higher Education published a comparative study of HESs in nine countries already in 1971 (Burn et al. 1971). A decade later, the International Council for Educational Development (ICED) published a comparative study of the HESs of Australia, Canada, France, (West) Germany, Iran, Japan, Mexico, Poland, Thailand, Sweden, the United Kingdom and the United States (Eurich 1981). Both of these had interesting results, but the data on countries was not gathered using a uniform method, which made reliable generalisations difficult. Cerych and Sabatier (1986; 1992, 1003) compared nine reforms of HESs in Europe since the 1960s, but instead of organisations, the focus was in the goals and results of reforms and their factors through the level of actual and factual implementation of the goals originally set. Palonen et al. (1992) compared the HESs and their reforms in Sweden, Norway, Germany, the Netherlands, Australia and the United States, but the focus was on the features of national ways to conduct education, not organisations at the HEI level. The same applies for a study of HES reforms between 1980–1998 in 18 European countries, published by the EU (Eurydice 2000), which regardless had a lot of interesting material, also from the point of view of the organisational structures of HEIs. Välimaa and Hoffman (2016, 6–8) compared the HESs of Finland, Germany, Portugal, Russia, the United Kingdom and the United States, but it focussed on how the HEIs of these countries are linked with contemporary societies. Although this had interesting findings on the environments of HEIs in the contemporary globalized world, the focus was again not at the HEIs' organisational structures. Haavisto and Hagelund (2003) did a comprehensive yet sketchy overview of all HES-level university reforms in the Nordic countries from the 1960s until 2003, but it did not at the same time focus at individual organisations either.

Looking at comparisons at the university and HEI level, they were at least as hard to come by. Clark (1998; 2004a; 2004b) did comparative case studies of entrepreneurial universities both in Europe and other continents, compared other universities using interviews, documentation and participant observation, and contemplated the funding base of universities in the 2000s (see also Kuoppala et al. 2003, 38–42), but the focus was not on organisational structures. Van den Berg and Russo (2003, 3–20) compared European university cities, but the focus was on the cities as places for studying and living, instead of the universities themselves. The universities of Amsterdam, Helsinki, Oulu, and Stockholm benchmarked their administration with an emphasis on the division of tasks between different organisational levels and decision-making systems (Virtanen & Mertano 1999, 3–11, 22–26). While this

pointed out the important difficulty of evaluating quite different organisational structures and processes with a single set of criteria, it focussed mainly on the universities' administration, like also other university comparisons (see Kuoppala 2004, 3–6; Halonen et al. 2004, 4–7; University of Helsinki 2005). In Mintzbergian terms, since 'administration' mostly exists in the technostructure and support staff parts (partially the strategic apex also), it is mostly outside my research scope. Sporn (1995; 1999; 2001) has compared the European and American universities' adaptation to their environments using interviews, strategic plans and annual reports. She found that the universities developed institutional strategies, structures and culture in order to adapt to changes in their environments, which also affected their organisational structures, but these were not systematically mapped, as the focus was in adaptation rather than in the development of organisational structures.

Finally, the EUA commissioned studies of the elements of university autonomy in 33 European countries and 28 HESs (Estermann & Nokkala 2009; Estermann et al. 2011) as well as of the institutional diversity (both internal within and external between institutions) of HEIs in England, France, Norway, Slovakia and Switzerland (Reichert 2009). Of these, the autonomy studies' organisational parts also dealt with the internal and academic structures of HEIs, concluding that, in the majority of countries, universities were relatively free to decide on their own administrative structures and to a lesser extent, also their academic structures, whereas in a minority of countries, universities had their structures shaped to a greater or lesser extent by law (Estermann & Nokkala 2009, 17, 40–42). Also, a general trend towards increasing university autonomy throughout was confirmed, although not without contrary cases of limited autonomy. This was the extent of conclusions relative to the organisational structures. In contrast, Reichert's study of institutional diversity also dealt with convergence and divergence, but using interview data and from the point of view of values, mission, study programmes, students, funding etc., not their effects on organisational structures. Regardless, for my purposes, Reichert's empirical study has been the most useful found, along with another EUA-initiated series: a comparative, interdisciplinary, comprehensive and transnational *A History of the University in Europe vol. I–IV* (Ridder-Symoens 1992; 1996; Rüegg 2004; 2011), focussing on the long and shared history of European universities.

The lack of comprehensive comparative research on the organisational structures of universities can be turned around as a strength for the comparative method: according to Crossley and Broadfoot (1992, 102) the comparative study of (higher) education is not a discipline, but a context that allows for the interaction of perspectives arising from a number of social science disciplines, or a multi-disciplinary field to which researchers from all disciplines may contribute. Studies with a somewhat similar research topic or method exist, and with a scope of about the same size, so I have learned from some of them. Such earlier doctoral thesis work includes Hölttä (1995, 10–14), developing a theory of universities moving

from state regulation towards self-regulation using several international comparisons; Harrinvirta (2000, 10–17), comparing reforms of public policies in OECD-countries in 1980–1995 using survey material; Aula (1999), studying the phenomena of chaos in organisations and the organisations of chaos; and Eräsaari (1995), comparing public sector bureaucratic organisations from a spatially structural and ethnographic points of view. Eräsaari (2002, 28–30) also used similar comparative methods in studying the *corporatisation* of the Finnish state and public management. One more organisational comparison to be mentioned is Verhoest et al. (2012, 3–26, 417–420), who working for over 25 years as a network of over 50 researchers, have done a comparative research of the government agencies of as many as 30 countries (including the EU), which was useful in developing classifications and agency type categories for public-sector organisations in many countries. Their results include that reform of public organisations occurs too often, that there is no ‘best’ organisational form to be used everywhere, at all times or for all tasks, and that organisational models should neither be copied directly from other countries, but instead always be fitted into the local context, traditions and administrative systems.

3.2 Research Data and Analysis Methods

As emphasised in chapter 2, the proper data that I had found for my research subject in fact influenced the choice of the theoretical framework, and not the other way around as usual. Nonetheless, before finding the data used, I considered other relevant options, including the laws, statutes, internal rules, strategies, organisation charts, reports and statistics relevant to universities. However, *for a successful comparison, a truly international setting and commensurate and comprehensive material was required*, though it is an arduous task to collect such data. According to Peters (2000, 189–191), in public management, longitudinal comparisons can be very valuable and the scholarly understanding of public management (of which the universities mostly are also a part of) has profited considerably from historical comparisons, although they often require a specific analytical framework. Universities are especially suited to historical analysis, because they have existed longer than most institutions dealing with political and administrative systems. Public management has historically been responsible for many functions and organisational structures, and while having retained most of these, it has grown in importance and gained also new ones. It is this long historical ‘continuity’ that offers the most interesting objects of study. *I thus concluded that an empirical, configurative comparison along these lines would benefit most from using longitudinal data*, which should cover as comprehensive a sample of all European universities as possible. It must be emphasised that *I am conducting a comparison based on longitudinal data, but not a time series analysis in the statistical sense or as it is used as a method of economics*.

Thus, my primary research data are based on the series publication by the *International Association of Universities* (IAU) and Palgrave Macmillan (until 2014): the *International Handbook of Universities* (IHU), published since 1959, and later developed into the digital *World Higher Education Database* (WHED), which both contain vast amounts of pre-existing and exact data on the formal organisational structures (e.g. existing organisational units classified by their type, organisational location, discipline, and other specific attributes) of thousands of universities worldwide. For the British-model affiliated universities and countries (the United Kingdom, Ireland and Malta, and just until 1993), the data have also been compiled from the IHU's companion volume, the *Commonwealth Universities Yearbook* (CUY), published by the *Association of Commonwealth Universities* (ACU). In addition, the data have been supplemented with historical compilations by the EUA (see Rüegg 2004, 673–706; 2011, 575–594) and in a few cases, the annual reports and official web pages produced by the universities themselves.

From the aforementioned sources, each university's organisational configurations (as Mintzbergian interpretations, see 5.1.2 for details) were compiled from a cross-section of mainly ten-year intervals, to make the long-term change in the universities' organisations apparent and 'measurable'. To enable a longitudinal study spanning five decades, I chose to analyse universities that have existed since at least the IHU's second edition in 1962. This choice is justified with both the fact that it enabled a more equidistant selection of data years, due to at first there not being regular publication years of the editions, as well as helping to avoid minor teething troubles with the first 1959 edition in a new series. Hence, I used data on the same universities from the 1962, 1974, 1983, 1993, 2003 and 2013 editions. For the abovementioned British-model affiliated universities, the data for 1962 and 1983 were replaced with the data from 1961 and 1985 respectively, due to the different publication schedule of the source material for the Commonwealth universities. The data set constitutes of a 40.3% non-random and non-probability sample (106 out of a total of 263 universities) of all those existing HEIs matching the precise criteria (see 3.1.1) for both 'European' and 'university' in 1962. Per the criteria used, most European countries at the time had only a few universities, and the smaller countries often had only one, so if probability sampling would have been used instead, several countries would have been completely left out of the sample, which considering the scope of the study, was not desirable. Keeping faithful to the principles of organisational ecology (see 2.2.1), at least one university was selected from each country to the sample, and then in the rest of the sample, in proportion to the number of universities existing in each country, were included as many different kinds of institutions as were available in 1962, so that the sample would represent the organisational variety found in the basic population. The four HES models were included in the sample maintaining their population balance, so that as close to 40.3% as possible of affiliated universities of each HES model were included (for further details, see 5.1) in the data.

On the other hand, this type of sampling caused the data to be focussed mostly on the well-established universities only, at least observing from the contemporary point of view. It would have been interesting to contrast the sample with some younger (founded after 1962) universities, but it would have been next to impossible to select such with any sensible criteria, in terms of timing, since the time span of comparison would have been cut short for the newer universities. Also, such universities have mostly been created by adapting patterns of the older and more prestigious ones. Still, from the organisational ecology point of view, this meant that the analysis is more focussed in the change patterns occurring within and among the universities and HESs being studied, instead of the types of entries and exits relative to the HESs' university populations, as would have been typical for the approach of organisational ecology. As a consequence of this sampling, the findings and results concerning the well-established universities, which represent well the HESs' university population of 1962, as such cannot be generalised to the HESs' university populations of 2013, which, owing to a large number of new university entries and hardly any factual exits, are considerably more populous as populations of organisations. However, as the research problem focussed especially on the organisational structures and longitudinal change of the members of those populations, this sampling was anyway the most justified.

The same type of data have been utilised in empirical research at least thrice: Hogan (2005, 49–50; 2012, 129–130) twice used the CUY data to study organisational unit reforms in all universities of the United Kingdom since the early 1990s. Also Smith and Adams (2009, 259–261) have used the data to compare longitudinal development of the HESs of the United Kingdom and Australia. Based on their findings, also some warning need to be given about such data. According to Hogan (2012, 129–130), it is difficult to obtain accurate information on the internal structures of universities, especially on historical structures that have been replaced. Universities are messy places, and titles and their meaning vary significantly between and sometimes also within universities. Terms like faculty, college, school, department, centre or institute might describe academic units which are in fact similar in function or units which are different and hierarchical to one another. Structures can be misinterpreted: it is difficult to be certain of the importance of a unit, if one is not familiar with the wider operation of the university. Formal structures are often a poor guide to the actual authority and function of individual units, since some changes in organisational structure do not *de facto* replace the previous structure, but rather are superimposed on the last set of organisational changes. According to Niskanen (2000, 152), problems might also occur if the criteria or measurement principles used in collecting the statistics have changed during the period studied. Hogan agrees by pointing out that organisational unit data like this might sometimes reflect the perception of the staff making an institution's return, or a different editorial approach within that institution, rather than changes in organisational structure. Continuity problems might occur if data categories have been renewed over the years, or if a university is missing a specific data point about

certain of its units for a certain year. Still, if handled with caution, such data provide an indication of organisational trends, and according to Hogan (2005, 51), are the best data set of its type available.

The data of this type included one pivotal shortcoming, when used with a theoretical framework grounded in SCT with Mintzberg's organisational concepts and the organisation ecology supplements. As these theories emphasise the contingent factors of the environment in understanding both the nature of organisations and their development over time, the analysis would benefit vastly if the data also included information about the contingent factors of the environment. Then it would also be possible to operationalise the environment for the analysis, the results of which would benefit more the theoretical discussion on the research subject. Yet in my data this was achieved only through limited portrayals of national HES:s and numeric data on the total amounts of universities and/or other HEI:s belonging to these HES:s as a function of time (compare with Table 5 and Table 6 in 5.1). Of other contingent factors besides age, some societal developments (like the NPM), dealing mostly with the universities' power relationships, are from the basis of historical research discussed in 4.5 and its subsections, and returned to the main analysis in chapter 5 as helping to interpret the observed organisational changes. Still, it would have been interesting to have data on the developments occurring in the universities environment, or to complement the data somehow from this point of view, but there were no easy solutions available. As there so far has been very little empirical research on the international long-term development of the organisational structures of universities, even this operationalisation should produce a lot of new information on the subject. The used theories do predict and speculate with the reasons of organisational change, and regardless of the fact that I am not able to explain 'why' the observed organisational developments occurred the way they did, I am still able to learn 'what' these developments were and 'how' they occurred over time. The alternative would be not to study this research subject with these data at all.

3.2.1 From an Open Mind, through Mixed Methods of Organisational Research...

I started looking for the empirical analysis method with an open mind. As I had large organisational data and wanted to cover new ground using existing theories, which are not data-oriented as such, I found it prudent to start my research process like Pedersen (1997, x) in his study of the first universities in Europe, by following a primitive method: by reading a lot of historical research on the European universities and their organisation, long enough to see of a picture of the entirety emerging, whose main features, from my subject's point of view, I could illustrate with examples. This material-oriented familiarisation brought up key classifications, like the different theoretical ways to look at universities as organisations, the various university models and their development, as well as the meso, macro and

global levels of higher education. Miller and Friesen (1984, 268) encourage scholars to apply a ‘theory-free’ search for patterns in the organisational data, and to construct typologies and taxonomies based on those findings, with *mixed methods*: by using both quantitative and qualitative data bases, and by relying on case evidence to discover more about individual patterns. According to Bleiklie (2014, 388), mixed methods are particularly useful to students of change processes wanting to clarify the relationship between structural variables, actor motives, process mechanism, and outcomes of change processes.

Puusa and Juuti (2014, 367–373) discuss the scientific paradigms of organisational research. Seen as ‘organisms’ with measurable quantifications, the universities and their organisational structures represent the functionalist paradigm. Simultaneously it is clear that the divisions of universities into organisational units could not exist or be understood without the human-given attributes and meaning they have, which on the other hand represent the interpretational paradigm. *For what is an organisation, if not a human attempt to organise and control otherwise difficult and uncontrollable phenomena in their lives and environments?* Kuoppala (2014, 251) crystallises this duality in that regardless of the various conceptual definitions of an organisation, it is difficult to provide a definitive or exhaustive definition, only due to the fact that *an organisation is always, for the most part, a product of human thinking: a cognition, possible and existing only through our own thoughts. It is not detectable by senses, yet is undisputedly bound to our physical reality.* According to Sale et al. (2002, 46–47) it is indeed possible and prudent to combine these two paradigmatic ways, and there are many rational arguments advocating their application in organisational research. Both share a commitment to understanding reality, both share a unified logic and the same rules of inference apply, both proceed from theory and generate empirical data, both have a value-laden inquiry process and as such should be used in research involving both humans and organisations, because of its inherently complex nature. (Puusa & Juuti 2014, 370–371.)

The term ‘qualitative research’ is vague at best, and covers a multitude of research orientations. Thus, according to Virtanen (2002, 72–73), being founded in several choices based on the personal skills, views and erudition of the scholar her/himself, all qualitative studies are ‘unique’ in character. In evaluating the reliability of such studies, the ontological and epistemic notions of the scholar, on the essence of the research subject and appropriate methods for it, are paramount. This certainly holds for mixed methods as well. Many qualitative studies on organisations are case studies, which often contain a substantial element of narrative, and good narratives approach the complexities and contradictions of real life. However, such narratives are difficult or impossible to summarise in neat scientific formulae, general propositions and theories. Even as this could be seen as a critique of the use of case studies, Flyvbjerg (2001, 84–87) on the contrary argues that true expertise is always based on intimate experience with thousands of individual cases and on the ability to discriminate between their nuances

of difference, without distilling them into formulas or standard cases. Therefore, it is prudent always to look at actual cases before their rules and ask 'What is this case a case of?' The problems in summarising case studies are due more to the properties of reality studied than to the case study as a research method. Case studies are essential in understanding the degree to which phenomena are present in a given group or how they vary across cases. The advantage of large samples is their breadth, while their problem is one of depth. For case studies the reverse applies. A discipline without many thorough case studies is a discipline without systematic production of exemplars and thus an ineffective one. Yet it is clear that my study with a large number of universities in the data is anything but a case study. Instead I have applied mixed methods that were able to combine the qualitative and quantitative approaches, to get 'the best of both worlds' while also avoiding the disadvantages of both. Hirsjärvi (2010, 233) points out that such *methodic triangulation*, that is the coincident use of several research methods, often improves the validity of the research, but this is true also for *theoretical and data triangulation*, meaning that several theories and types of data have been implemented in the study to focus on the same research problem.

Mintzberg regards configurations as a combination of attributes of cases being studied, formed at a level general enough so that one configuration may be used to describe a larger group of cases. When the objects of study are compared as combinations of their similarities and differences, this type of research is called configurative comparison. When the assembly of cases is thus described, all the cases are still being described as cases, while at the same time being reduced to a more limited set of configurations, which is desirable from the research comparison point of view. This methodological arrangement has also been represented and developed by Ragin (1989, 49–52, 67–68; 1994), who preserves the qualitative nature of the analysis, because comparative research often deals with phenomena, which are almost impossible to describe in a satisfying way. Hence, Ragin's comparative research balances between qualitative and quantitative methods: when qualitative implies an in-depth research of a few cases, and quantitative implies research of relations between variables in a large number of cases, comparative research at its best to Ragin implies a research of variation in somewhat greater number of cases. Also Tilly (1984, 80–83) considers this 'variation-finding' comparison as one of the four methodological arrangements of research into complex social systems. Thus, the use of Mintzberg's flexible organisational concepts is most prudent in a research that methodically needs to apply both to the qualitative and quantitative aspects of one and the same data. (Hyyryläinen 1999; 2000, 139–140.)

It must be emphasised that such configurative variation-finding comparison along the lines of Ragin does not process or statistically test quantitative data with variables and their values quite like a mainstream inductive quantitative research does. It neither attempts to 'explain' the phenomena being studied with combinations of independent and dependent variables. For example in my data, the observation units are

both the ‘academic’ units of the universities’ professional organisational structures (see 5.2 and its subsections) as well as their configuration size (see 5.5.1), shape (see 5.5.2) and differentiation (see 5.5.3) as a part of the HEI level, but they are also whole universities (see 5.3 and its subsections) as parts of the populations comprising the HES level. The variables for all observation units include the year, the inherent quality and the frequency distribution (or other numeric value, like an index figure) of the observation units in question, which can have many kinds of values depending on the nature and the variation of the variable in question. For instance, if an observation unit is an academic unit belonging to the organisational structure of a certain university at the U-1 level, it gets six possible data year values of the study period for its year variable (like 1983), the 35 unit category values for its quality variable (like ‘F’ meaning Faculty, see Appendix 3), and the frequency distribution number value for how many units exist at that level (like that it is one out of a total of seven faculties (7F) at its U-1 level in its university). *I mostly created the needed variables and selected their value categories by using directly already existing ones found in the data of the IHU/CUY/WHED longitudinal publications (see 3.2), which have considered and developed their listing methodologies for decades and collected the entries of their member universities for each publication volume in a uniform way, also considering systemic challenges like the largely varying academic terminology in different European languages and proper translations of university unit name categories etc. Consequently, I mostly did not need to form new sophisticated variables, and the reliability of the data items did not raise major concerns, because the purpose of the analysis was configurative variation-finding rather than to conduct a statistical analysis. Also, such statistical analysis of the data would not have contributed to any effective ways of answering research questions of the chosen research design, as my study, along the lines of Ragin, was not about testing hypotheses related to the correlated variation of the values of the variables used.*

3.2.2 ...To an Organic Contextual Comparison with Juxtaposition

To sum up, *my research is a configurative comparison of the organisational structures of well-established European universities based on a longitudinal data covering five decades.* Clark (2006, 555–558) calls this way of doing grounded higher education research, where interaction among organisational elements and change are captured in the form of concepts derived from actual practice, an *organic contextual research*. According to Salminen’s (2000, 25–26) classification of research in the field of administrative comparisons, the methodological arrangement is thus a *comparison of several cases approached with juxtaposition*: a systematic, analytical and illustrative comparison of differences and similarities found in the features of a single phenomenon in different countries, cultures or contexts; in this case the structural features of organisations in European universities. This emphasises methodological attention both to cases and variables, the side by side use of qualitative and quantitative

approaches, and that universality will cover particularity in the data. Each of the national European university models has influenced a 20th century HES model that corresponds to formal organisational structure configurations of affiliated universities (see 4.5.3). For example, some universities affiliated with the British HES model consist of numerous independent colleges and a weaker collegial central administration, set in campuses. In Mintzbergian terms, this means a flatter middle line and a wider, more uniform operational core than on average. On the other hand, most universities affiliated with the German HES model are usually set in larger cities, have several faculties and departments, stronger collegial and/or managerial administration. In Mintzbergian terms, this would mean a taller middle line and a narrower yet less uniform operational core than on average. Similarly, both ideal type and historical university models (see 4.1) as well as all existing real universities represented in the data can thus be operationalised this way as Mintzbergian organigram configurations. Even as this flexible and scalable method is in practice possible to apply, and in this research, is consciously applied also to the organisational structures of universities and university models of also much older historical periods, it must be noted that Mintzberg's configuration theory is developed primarily for the analysis of modern organisations. In any case, hence it becomes possible to compare empirically, how the universities conform to their HES models, how their organisational structures have developed in the last fifty years, and how they in larger groups and as a population relate to the organisational convergence and divergence claims. This method also meets both Smelser's criteria of comparability and Viinamäki's criteria of equivalence discussed earlier in the beginning of chapter 3.

The data contains information about the size (for definition, see 3.1.1) of universities as organisations, based on the commensurate numbers of both academic staff and enrolled students (for precise definitions and details of these, see 5.5.1). Of the 'organisation in fives' five parts, the data contains quantity and quality configurations from the operating core, the middle line and the strategic apex, a few attributes of technostructure, but very little on support staff. This could be perceived as problematic, because in Mintzberg's concepts, all organisations are composed of the five meaningful parts, even if for some organisations, some of the parts are under-developed to the point of nonexistence. In universities, all five parts mostly exist, even as the technostructure has usually been quite limited and the support staff often emulates the shape of the operating core (cf. Figure 3 in 2.3). *If the data cover the five parts only partially, is this problematical for the operation of the theory and does it thus hamper the analysis?* This is an important question to deliberate. It must be emphasised that in a professional bureaucracy the operating core is the key part of the organisation and that the universities' main tasks of scholarly research and education are conducted and administered mostly inside the other parts than support staff. Furthermore, in universities, as the structure of the support staff part often emulates in shape the combination that the operating core and middle line form together, from the point of view of the

universities' formal hierarchies of organisational structure units – to which the technostucture and support staff parts almost never belong to – they and their change can be properly studied through the professional organisation's three 'hierarchy' parts only (see also Pilbeam 2009, 344). Still, as a result the analysis becomes somewhat limited and demarcated in scope in a similar way as the lack of data on the contingent factors of the environment (see 3.2) limits and demarcates from explaining, what has caused the observed developments in the organisational structures. Turning the issue around, as I saw early on that the data had a lot of interesting potential to reveal new facts on the very long-term development of the universities' organisations, even after a thorough (see chapter 2) study of organisational theories, I could not think of one that in its entirety could have been able to operationalise my research problem and the organisational structures of all real universities in even nearly as meaningful, versatile and scalable way, as the 'structures in fives' can. Hence, *even when used with limited data, it is still by far the best research theory for this research task.*

Another, related issue is that in Mintzberg's (1979, 470–471; see also Pilbeam 2009, 345) configuration theory (see 2.3), organisations are being pulled in different configurational directions, like the professional bureaucracies are pulled to become adhocracies under the influence of experimentation and dynamism in the environment, or to become machine bureaucracies under the influence of rationalisation and external control in the environment. In adhocracies and machine bureaucracies, the technostucture and support staff parts of the organisation would have different emphases on the organisation as a whole. This means that even as neither the technostucture nor support staff parts' (which in universities mostly represent administration) size or distribution notably affect the traditional university organisations' shape as a hierarchy composed of academic units (involved in education and research) on different authority levels, if some of the universities in the data would in fact have developed towards an adhocracy or a machine bureaucracy during the study period, it would not be easy or even possible to observe such development from the data. Even as Mintzberg considers all universities professional bureaucracies by default, Pilbeam (2009, 347–351) considers four university types (collegium, bureaucracy, corporation, enterprise) in relation to Mintzbergian theory, each emphasising a different part of the organisation as key, but these are regarded as ideal types (cf. 4.1) and have not been used in the empirical research of actual universities. *It is then a limitation of my data that the universities may be studied as professional bureaucracy type of organisations only.* However, using the data this way enables the comparison of the organisational development of individual universities, the development between universities and the development between groups of universities, per their affiliated 20th century HES model groups.

According to Kuoppala and Marttinen (1995, 47), the method of comparison of institutions/organisations has three phases: First is the description of the attributes of the phenomenon

being studied in different environments. Second is the sorting and classification of observations into groups and typologies. These are understood in the Weberian sense (*Gedankenbild* in German) as ideal types (see Weber 1978a, 20–21, 57), schemas, tools and methods of research that help to interpret reality, useful in historical data analysis. They are models relating to concepts or developments, cleared of randomness and condense the relevant features of the subjects of the empirical research. Third is to find regularities from the relations between the different factors. To begin with, the configurations are a basis for forming variables for quantitative analysis, which are used to analyse phenomena, like how have the universities' organisational structures integrated versus differentiated (see 5.5.3) or converged versus diversified (see 5.6) during the study period, and what are the interdependencies between size and multitude in universities. According to Niskanen (2000, 152), longitudinal comparisons are practically and reliably achieved indicators, by building indexes out of the factors – even from not otherwise compatible ones – being compared and representing their development over time as relative changes occurring in the indexes. In this way, *utilising longitudinal comparison of the data, it is possible to measure the 'size' and 'shape' of the universities' organisational structures as well as their recurring change and development patterns as a function of time*. Simultaneously, the configurations are qualitative 'observation points' telling a tale about their universities' history and organisational structures, shaped by their affiliated university and HES models, their national HES and contingent factors, like available funding or international developments. These *observation points are analysed by systematically comparing the existing similarities and differences of the configurations' qualities found in the data*. Even just the basic usual configuration 'form' of units in a university (e.g. faculty/department/school/college/etc.-base, overall organisational shape etc.) and the internal logic and presence/absence of the elements belonging to different configurational 'families', or their affiliated university models, demonstrate a lot about where and how these universities got the elements – or 'organisational genes' – they are composed of. (Ahonen 1989, 64–65, 120; Mattila 2006, 36–37.)

This type of data has great potential and strengths, like comprehensiveness and commensurability across countries, years and universities' organisational structure models. The data is also full of exciting examples of various phenomena related to organisational development and reforms, including individual unusual configurations, total 'makeover' reforms of universities, various cases of divisions and mergers etc. According to Theisen and Adams (1990, 278–280), the primary task of a comparative researcher is to identify an acceptable level of conceptual equivalence across cases being studied. The second task is measurement, and all data-gathering methods are subject to comparability problems. Comparative research that is rich in descriptive detail is usually focussed on individual cases. Large-scale surveys that produce highly aggregated data from many countries can provide breadth, but they are often frustratingly deficient in detail. In the former, *reliability* of findings and their generalisation is often questioned; in

the latter, *validity* (Hirsjärvi 2010, 233). I have built from my data a comparative matrix, and models of organisational structures of universities that would in turn answer my research questions. The analysis of the research data should produce a clear parsing and reasoning of the universities' organisational structures that can add both the descriptive and exploratory understanding of universities as HEIs and provide essential information for all university decision-makers to be used in future reforms.

3.2.3 Potential Limitations of the Method and Their Evaluation

I will shortly discuss limitations, boundaries and weaknesses that this type of comparative research is heir to, which have not yet been addressed and should be recognised. In any research subjected to the university itself, the researcher can never position him/herself totally objectively outside the subject of study, since higher education research is inevitably included in the university as a part of its organisation too (Huotari 2003, 33). Also Noah (1984, 560) and Theisen and Adams (1990, 279) warn from ethnocentrism as a potential problem of the comparative method. This is the fault of looking at world primarily from the point of view of the observer's own culture and values, for example to define in higher education something a 'problem' that is really such only from *our* point of view and given our set of values or our national HESs, but is not a 'problem' from the point of view of people in other societies. Crossley and Broadfoot (1992, 100) give an example: the educational control in the 1990s was being rapidly centralised in England, and at the same time decentralised in France, so that neither country really learned what was going on in the neighbouring countries or in Europe in general. Therefore having a background in the Finnish HES myself, I must strive to keep my point of view consciously European.

Another limitation of this methodology has to do with the question of whether the analysis of the organisational structures of universities really helps us to understand something pivotal and important about their wider existence. *The essential restriction of sets of organisational configuration data is that it cannot be very deep in a qualitative sense, and as such it fundamentally cannot answer questions about 'why' the organisations have developed in their environments over time as they have; just if, when and how they have evolved.* One could only speculate which contingency factors to blame, even if they cannot be verified by the research data available. On the other hand, it must be emphasised that my scope is in the comparison of configurational and population level phenomena, not in the study of individual universities or their 'building blocks' as such, but instead a comparison of the configurations of those building blocks forming universities as HEIs and further forming populations as HESs. Thus, the universities in my data are indeed not 'cases', but instead observation points!

I must understand and be aware of the dangers that come with comparative research as a method.

According to Crossley and Broadfoot (1992, 107), these include false comparisons and difficulties in obtaining valid and comparable data for analysis. International and national classifications frequently also differ with respect to the same data categories. This challenge can be affected through the boundary conditions regarding the research data. Other problems of comparative research of higher education have to do with the usability of findings and results. This is a bigger worry for decision-makers than the researcher – especially if the object of the exercise is to find easy solutions abroad for complex problems at home, which in my case it fortunately won't be. It is difficult to take any single part of a HES and copy it to another HES with different national conditions believing it will work there in the same way and produce the same results. Transplantation is a difficult art, and several scholars claim that international borrowing of educational ideas and practices has so far created more failures than successes. (Noah 1984, 550–551, 556; Crossley & Broadfoot 1992, 100; Salminen 2000, 22–23.)

4 An Overview of the Historical Development of the Organisational Structures of Universities

The understanding of organisational variety within a historical perspective merits a central place in all public management: without such perspective one cannot comprehend which viable models of organisation are available (Hood 1998, 7). As emphasised in 1.2, the universities in particular cannot be studied irrespective of their history and location, due to their longevity among the world's oldest institutions: some universities are still operating in the same cities, and even the same buildings as they were hundreds of years ago. Even in the 21st century, their basic methods of operation, organisational structures and administrative forms can be seen to have been derived from centuries old, even medieval traditions (Aniluoto 2013, 24–26). Thus, this chapter 4 is a prerequisite grounding context for my empirical analysis (in chapter 5): a thorough comparative overview of existing historical research that brings about a necessary perspective, in which the historical development and filiation of European universities, their organisational structures and their implementation of the historical university models, their HESs and HES models is described in sufficient detail to ground the main analysis. In Mintzbergian terms, the overview also charts the historical ancestry and first emergence of the organisational structure units belonging to the universities' operating core, middle line, strategic apex, support staff and technostucture parts. According to Ben-David (2002, 9), higher education as a social institution has developed over a very long period, and its development cannot be broken into too precise stages. However, since it needs to be done for the analytical purposes of representing stages of development, I will use a historical division used in the *A History of the University in Europe* series (see 3.1.3). This periodicity covers universities in: 1. the Middle Ages (until 1500, see 4.2), 2. early modern Europe (1500–1800, see 4.3), 3. the 19th and early 20th centuries (1800–1945, see 4.4), and 4. since 1945 (see 4.5). Also, Ross (1976, 4) has used a similar division of evolutionary stages in his overall description of the university institution: 1. the medieval university, 2. from 1500 to 1850, 3. the 1850 to 1950 period of growth, and 4. from 1950 onwards.

4.1 The Usage and Limitations of University Models as Analytical Tools

University models can be defined in many ways, including as *metaphors* or *organisational models*. Birnbaum (1988, 132) uses metaphors describing different types of American HEIs: a traditional college is seen as a 'family', a bureaucracy-oriented community college as a 'machine', and a public state university type political university as a shifting 'kaleidoscope' of interest groups and coalitions. Standaert (2009, 41–46) describes the history of universities with metaphors by claiming that the Medieval *studia*

and universities with their overlapping education are explained by use of the metaphor of a *pyramid*, while later modern and secular universities' metaphor is a *pillar*, with silos of disciplines and faculties etc., and the metaphor for the universities of our own post-modern network society is a *web*. Niiniluoto (2011, 90–94) has summarised others' work on university metaphors into a *bazaar*, *factory*, *oasis* and *temple*, all based on the internal and external attributes and purposes of universities. As fascinating as these metaphors for entire universities are, they would not be useful analytical tools in trying to understand the historical development of actual organisations of complex real universities. Therefore, I turned my attention from metaphors to organisational models instead.

According to Birnbaum (1988, 83–84), an organisational model is an abstraction of reality that allows to understand and predict the dynamics of the system it represents. Models are neither right nor wrong, just more or less useful for examining aspects of organisations. A model serves as a conceptual lens that focuses attention on particular organisational dimensions, but in doing so, it also inevitably obscures or obliterates others. Models create perceptual windows that filter out some things while allowing others to pass through: they help to order the world. No model of a complex system like a university can be a perfect representation of that system or fully capture the richness of real institutions, but they represent idealised versions of institutions seen through the lens of a specific cognitive frame. This purposeful simplification serves two objectives: it allows the salient aspects of any model to be placed in uncluttered and bold relief, and to show that understanding HEIs cannot be achieved by limiting one's approach to a single frame or model only: no organisational model can illuminate all aspects of any real HEI all of the time, and all models might illuminate some aspects of every HEI some of the time. Just as a person familiar with only one institution cannot really understand any institution, a person familiar with only one model does not understand any model. However, when the models are compared with juxtaposition, they can aid our understanding of the organisational structures of universities by simplifying complexity: some major themes may be uncovered by focussing attention on specific limited aspects (Walford 1987, 143).

Tirronen (2010, 14–19; 2014, 40–41) further describes three categories of organisational university models: *concept models*, *ideal type models* and *historical models*. Concept models resemble metaphors in that they emphasise the general purpose or function of the entire university institution. These include the scholastic model, the traditional civilisation model, the service model, the research university model, the educational university model, and the market university model (see also Maassen & Olsen 2007, 20–21; Olsen 2007, 29–33). Ideal type models try to answer the question 'What is (or should be) the idea and/or character of a university?' There have been several famous answers representing the ideas of notable scholars and academicians of different ages and schools of thought. Two of the most cited include *The Idea of a University*, an address given by John Henry Newman at the inauguration of the

Catholic University of Dublin (as an alternative to the Anglican Trinity College Dublin) in 1851, most notably in its emphasis of seeing universities as tutorial places of teaching, learning and understanding intellectual, universal knowledge, based in the collegiate model of Oxford (see Newman 1907); and Wilhelm von Humboldt's professional, scholarship-emphasising university ideal of research-based education, based in the model of the University of Berlin of the beginning of the 19th century. After these two are named the famous *Newmanian* and *Humboldtian* university traditions. (Brown 1982, 1; Wyatt 1990, 17–33, 114–115, 121–115; Gellert 1993b, 243; Kerr 1995, 2; Barblan 2011, 554.)

Both concept and ideal type models differ from historical models in that the former two categories have never existed in their pure form as real institutions. Instead, they are normative and represent concepts, ideals, goals and philosophies that can be aspired to by real institutions, but which even at their best, can adapt to them only partially. *Mintzberg* (1983, 156, 283, 288) *emphasises that his organisational configurations* (like 'university as a professional organisation', see Figure 4 in 2.3) *are ideal types many times over: typologies of pure types, caricatures or stereotypes of reality, in order to sharpen differences and in this way to better understand reality*. On the other hand, the third category of *historical university models* is operational in its approach and *can model actual institutions with realism and in a way that is compatible with Mintzberg's organigrams*, as real 'applied' versions (like an existing university in my data at a given year) of the ideal type of Mintzbergian organisational configurations. As Wyatt (1990, 16, 32–33) points out, the university is not a machine that can be reassembled elsewhere. Continuity is fundamental, the place itself matters, and even the ideal university must have content and structure: the university may live in the mind, but it is always trapped in a body of buildings, regulations and structures. These factors can all be studied empirically, by the application of historical university models. (Walford 1987, 140; Rider 2009, 86, 94–95; Tirronen 2014, 40–41, 68.)

Two comparisons demonstrate the analytical power of the university models: Suulamo (1987, 2–3) compared eight Nordic universities in order to improve their development and administration, while Kuoppala and Marttinen (1995, 118) compared the HESs of Finland, the Netherlands, Germany, Sweden, Norway and Denmark. Suulamo concluded that all the universities had a similar three-level organisation, composed of faculties and departments, and also their governance models had a tripartite, representative decision-making organs at all levels. Kuoppala and Marttinen found that the universities belonging to the HESs studied were all quite similar. Both thus also lacked strong conclusions from the organisational point of view. However, when one grasps that organisation-wise, all the universities and HESs studied at least partially descend from the national German university model (and for the Nordic countries' universities, also their joint 20th century HES model adaptation, see Figure 9 in 4.6), one could have predicted beforehand the comparisons' conclusions, which then seem obvious or self-evident.

When using university models as analytical tools, one must also be aware of their limitations. According to Walford (ibid., 127–128) many authors tend to put too much trust in the models they develop and claim that each has captured the true nature of university organisations, forgetting the many limitations that are a direct product of the modelling process. *Models are essentially simplifications of complex realities.* By focussing on one particular aspect of the complexity, it is possible to construct a way of looking at that aspect which exemplifies order, and thus clarifies previous examples and possibly allows prediction within future examples. However, concentration on a different aspect of the complexity might have brought the development of a different and even contradictory model, and other scholars could have developed equally intelligible but different models, even though they were focussing on the same aspect. In this work, I use my university models like Birnbaum (1988, 83–84): *as abstractions of reality, that allow to understand and predict the structural features of the university organisations they model.* My models are thus historical, but they are still used as simplified abstractions rather than as representations of collected historical facts. It must be emphasised that even the 19th century national university models are historical and not ideal type models, even as each one of them also corresponds with, and has tried to emulate a famous ideal type university model (see Table 3 in 4.4.5).

4.2 The Medieval University: the Models of Bologna and Paris (from 11th to 15th Centuries)

As pointed out in chapter 1, the university is a European institution *par excellence*: a product of the Middle Ages and Europe. Also, no other European institution has spread over the world in the inherently transnational and global way the traditional form of the European university has (Ridder-Symoens 1992, xix–xx). In trying to understand universities and their organisational structures, one must then begin with the ancestry of both. Centres of advanced scholarly research and instruction, academies for philosophical discussion and instruction in specialised schools for military science, administration, law and theology had been known in antiquity and in ancient Egypt and India, Mesopotamia and other cultures of Middle East, parts of the Islamic world and Imperial China. As institutions they have not survived (Shils & Roberts 2004, 164). And even though the ancient Greeks and Romans had a high level of culture and education, they had no permanent institutions of higher learning. It can thus be concluded that although the intellectual roots of universities reach back to classical Greco-Roman antiquity and are indebted to Arabic intellectual life, universities as institutions cannot be traced back to ancient Greek, Roman or Islamic schools, and neither were they influenced by Byzantium (Haskins 1957, 1; Cobban 1988, 1–2; Rüegg 1992, 7–8; Lucas 1994, 4–33). (Ross 1976, 4; Pedersen 1997, 1–28; Ben-David 2002, 9.)

4.2.1 The Debate on the Origin of the First Universities

It is a problematic question to ask which university is the oldest one. How and at precisely when can one name an institution a 'university' in a world where no universities previously existed? The timing varies depending on the definition of a university and the historical sources referred, but often the founding of the University of Bologna, calculated to be the year 1088, is considered to be the oldest (Zanasi 1988; Hermans & Nelissen 1994, 18; Nuorteva 1997, 20; Le Galès 2002, 39). However, this year is just one that the 19th century university leaders 'chose' for practical purposes, so that there might be a grand 800-year jubilee celebration in 1888, and Bologna again celebrated its 900-year jubilee in 1988. But it is likely that not enough instruction and organisation existed to merit the term 'university' before the 1150s or even 1180s, although the timing is at least roughly accurate (Rüegg 1992, 4–5). (Grendler 2002, 6.)

During medieval times it was believed that the oldest universities were older: like that, the university of Paris would have been a descendant of Plato's Academy in Athens, or that it would have been founded by Charlemagne; or that the university of Oxford would have been founded by King Alfred the Great in the 9th century (Durkheim 1977, 76–77). However, modern historical research has proved these and similar legends as evidence that many medieval historians had little critical sense (Pedersen 1997, 1). It is hard to realise that many things had no distinct founder or fixed date of beginning, but instead 'just grew': arising slowly and silently without a definite record (Haskins 1957, 2–4). Virtanen (2001, 3) points out that many universities tend to exaggerate their histories, in order to gain the merit and prestige of long academic traditions. This is done by extending the founding year of the university to reflect a founding of an earlier school, seminar, college etc. which historically preceded the university in the same location, but which with the criteria of historical research could not yet be considered a university. For these reasons, the oldest universities have properly declared in the official records only the century of their founding instead of a year: the University of Bologna the 11th, and Paris and Oxford the 12th century (Pedersen 1997, 1; Lehto 1999, 340). The origin of the first universities is complex: either Bologna or Paris may be called the oldest, depending on the weight attributed to the elements which make up a university, and together they provided a model for all others (Rüegg 1992, 6; Grendler 2002, 5).

4.2.2 Earliest Organisational Developments: from *studium generale* to *universitas*

Before the first universities were founded, monasteries and cathedral schools were the centres of higher education. Many cities had monasteries long before colleges, and these attracted branches from different ecclesiastical orders. Often the Franciscans and the Dominicans were the rivals for the professorships, but inevitably a trend rose towards freedom of discussion, as opposed to adhering to the doctrines of

the Church. Latin, the language of the Church, was also the *lingua franca* of scholars of the early universities. (Lucas 1994, 36–39; Pedersen 1997, 145–149; Sager 2005, 207.)

When seeking evidence of the earliest collective responsibility exercised by the governing bodies of universities, one comes across a feature, which has always been a criterion for the recognition of HEIs as universities: the awarding of degrees, particularly the doctorate, by an academic committee or *collegium*. Such a committee is mentioned in the *Magna Charta* of the university at Paris as early as 1213, and in 1215 the first statutes of the university were promulgated to reform and improve the Parisian schools. *Most universities then got their basic organisational form by reproducing patterns of either Paris or Bologna, the two most successful institutions, and this explains the basic uniformity of the university organisation* into faculties as well as of the degrees and study programmes. Regulations having proved themselves in one place were equally applied elsewhere, although they had to be negotiated with local and municipal authorities and institutions, churches, professors, princes and nations, and adapted to the local circumstances. (Rüegg 1992, 23, 30–31.)

The terminology concerning medieval universities is a complicated issue. Only by accident did the Latin term *universitas*, from which the word *university* derives, come to be associated with university institutions. Its original referent was a craft guild (Fuller 2000, 55). Until the 14th century, the term was used to denote several types of a corporate body (in Roman law), and when used in relation to universities, it referred to the guild of masters, students, or both combined: to the academic personnel, and not to the university as a complete entity (Haskins 1957, 8–9). After having its first ‘modern’ usage as a description for the collected academic world of Bologna in 1215, *universitas* came to be used – and especially from the 15th century onwards – increasingly to designate a university’s structure as a whole and not merely its guild constituent. Before that, from the 12th century, the term that most frequently rendered the medieval concept of a fully-fledged university, was *studium generale*. The *studium* part indicated a school with organised facilities for advanced study. The *generale* part referred not to the general nature of the subjects taught, but to the ability of the school to attract students from beyond the local region. Often it would draw students from all over Europe, and might evolve into a cosmopolitan centre as Bologna, Paris, Montpellier and Salamanca did. Such a school taught not only the introductory *artes liberales*, but also at least one of the advanced subjects of medicine, law or theology. A school lacking these qualities, and serving only a town or a limited area, was by contrast a *studium particulare*. (Durkheim 1977, 90; Cobban 1988, 2–3; Lucas 1994, 41–42; Pedersen 1997, 133, 144–145.)

The *studium generale* in Bologna was focussed on and famous in the revival of Roman law, while the one in Paris had developed itself foremost in theology (Haskins 1957, 6–7, 19; Pedersen 1997, 145;

Grendler 2002, 447–460; Anderson 2006, 1). Salerno in Italy and Montpellier in France emerged early as leading institutions for medical studies (Lucas 1994, 53; Grendler 2002, 117–118). These specialised schools addressed the growing needs of society far more than the lesser cathedral schools did, in just those categories of education that were most needed, by producing teachers, physicians, jurists and theologians. It was the use society made of the teaching of specialised schools that led to their success. A *studium generale* which had Greek as its special subject would have been received with enthusiasm by scholars, but would not have thrived in the 12th century, simply because it was irrelevant to the needs of the society of that period. (Durkheim 1977, 90; Pedersen 1997, 134.)

In the 12th century, Paris and Bologna acquired the status of archetypes, which determined the twofold pattern of university organisation in the Middle Ages. The Parisian type gave birth to the *magisterial university*, directed by a guild of masters, while the students were academic apprentices, devoid of *de jure* rights of participation in university government. Bologna developed into the archetypal *student-controlled university*, where the guilds of students directed the university and kept the lecturing staff in a state of subservience. To be clear on the use of university models (see 4.1), the archetypal magisterial and student-controlled universities can be regarded as ideal type models that Paris, Bologna and their adaptive followers applied in their historical models. Although Bologna and Paris remained the models for university organisation, many universities also produced either their own adaptations, or mixed forms of constitutions representing a fusion between the Bolognese and Parisian patterns. However, the fact remains that all universities of later times are descendants of medieval Bologna and Paris. (Haskins 1957, 2–3, 16; Durkheim 1977, 75–76; Cobban 1988, 16–17, 64; Hyde 1988, 13–14; Anderson 2006, 1.)

4.2.3 The University Model of Bologna (the Students' University)

In the intellectual revival of the 11th and 12th centuries, Bologna grew into a meeting place for students and scholars from all Southern Europe. Famous scholars offered studies extending from grammatical studies and composition all the way through juridical rhetoric and other advanced subjects. The teaching grew in prestige, which made Bologna famous for legal studies and Roman law. Civil and canon law attracted a growing number of foreign (non-Bolognese) students. Since they had little legal existence away from their homes, the legal students created a corporation in order to assert legal rights. This first student association was recognised as *universitas* in an imperial charter in 1158, which granted privileges to the at least three local *studia* in Bologna. By 1215, a fully-fledged university was in operation. In 1219, the pope decreed that the Bolognese church had to approve the granting of the *licentia docendi*, the licence to teach (Grendler 2002, 7). A combination of structured teaching and student corporations thus marked the origin of the University of Bologna. (Lucas 1994, 44–45, 58–59; Grendler 2002, 5–6.)

The Bolognese student associations exercised powers students everywhere can since only dream of: they appointed, paid and dismissed the professors, and their guilds ran the university and dominated the masters (Kerr 1995, 15–16; Kähkönen 2016, 35–42). However, the ‘students’ were mostly mature and wealthy men, unlike those attending the northern universities or most students of later ages, which in part explains their greater influence and institutional control (Ross 1976, 7). The students’ greatest strength lay in the threat to migrate to another town to learn from other instructors, taking with them the considerable income that wealthy foreign students brought to a host city. This, combined with the economically developed conditions of northern Italy (and its division into rival city states) caused the area to become a heartland of university migrations and the success of the system of student-run universities, suited to geographical mobility (Verger 1992, 53). In the following centuries, Italian city governments and princes founded universities in waves. (Clark 1977, 10; Grendler 2002, 1, 6.)

Formally, the plenary assembly of all students was the highest authority of the university in Bologna, but in practice, the *nationes*, that is *student nations* existed as sub-groups and as corporations for students of a particular geographical origin. Formed for security and protection, they originated as fraternal associations of out-of-town students who had banded together for mutual aid against sometimes hostile local authorities. The daily governing of the university was managed by the two simultaneous *rectors* of the student nations, who had equal status: if one was absent, the other could act on his behalf. The high-ranking rectors took precedence over bishops, archbishops and cardinals, except the bishop of Bologna. In time the two offices were made into one and later lost their relevance. After 1609, the proceedings were conducted by a *prior* elected by the scholars, until in 1742 the rector was reintroduced as a permanent institution, though placed in the hands of the cardinal legate of Bologna. Only after this did students’ self-government come to an end. Bologna will remain proof in history that with the right economic conditions, a medieval university did not have to be a professors’ one. Proceeding in Mintzbergian terms, the two student nations can also be considered as becoming the first organisational structures within a university, ever. (Pedersen 1997, 208–209; Grendler 2002, 157–158.)

4.2.4 The University Model of Paris (the Masters’ University)

As a rival to Bolognese influences, from the 12th to the 16th century, France provided a widely emulated model of European universities, with its ‘university of masters’ of Paris (Burn et al. 1971, 11). The city and its university grew up together: Paris became a commercial centre and the greatest city in northern Europe, the capital of a powerful French kingdom and the site of a pre-eminent university. Paris drew its scholars from throughout Europe and thus was not a local *studium particulare*, but a geographically wider *studium generale*: not as a university ‘of’ Paris, but a university ‘in’ Paris (Ferruolo 1988, 22–24).

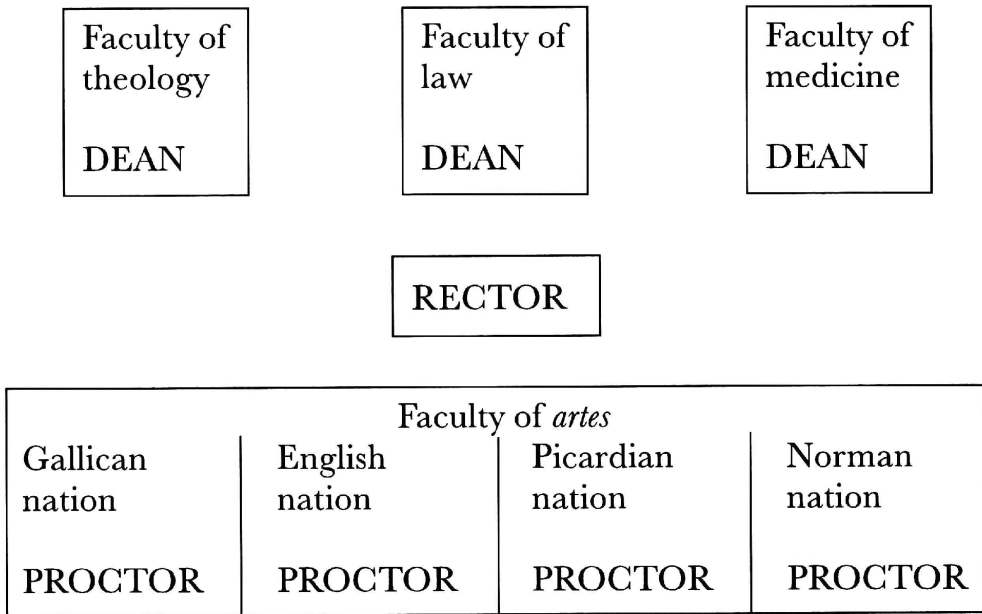


Figure 5. The organisational structure of the medieval University of Paris (adopted from Pedersen 1997, 203).

The Parisian university model stemmed from the authority of the masters and their corporations, rather than from the students. The basic institutions (and for the purpose of my research, the first organisational structures) of the Parisian university at the 13th century were the four nations at the *artes* (arts) faculty and the three ‘higher’ faculties of theology, law and medicine. The Parisian model with its four ‘classical’ faculties gave the features of its organisation to most universities founded in the north half of Europe of the 15th century (Verger 1992, 59). Within these, the organisation and role of the arts faculty varied. It was dominant also in the old Oxford and Cambridge, and like the rest of their organisational units, a masters’ organisation. But only at Paris was the faculty structure clearly defined: each faculty was a corporation within the greater corporation of the university, having its own assembly, statutes, elected head, officers, seal, chest, schools, meeting place and patron saints. Those features were reproduced in the nations: the Gallican (French), the Norman, the Picardian and the English(-German), which strictly did not correspond to their names: the French extended to Italy and Spain; Norman and Picardian covered only parts of territorial France; and the English-German included the British Isles, the German Empire, Eastern Europe and Scandinavia. It was in the seven autonomous corporations – the three higher faculties and the four nations of the arts faculty – that the teaching and examining were conducted under the masters, who administered the corporations. The masters together made the decrees, to be reported to the university’s leadership, which as an official entity consisted of a *rector universitatis*, three deans of the higher faculties and four proctors of the nations, working together in a democratic way. The

rector was *primus inter pares* (first among equals), but had no real authority over his colleagues. Because a host of HEIs in Europe were influenced by the University of Paris, traces of the French liberal arts tradition can be found in the much later HESs of much of the world (Burn et al. 1971, 11). (Haskins 1957, 16; Durkheim 1977, 97; Leff 1992, 333; Lucas 1994, 41–44; Pedersen 1997, 202–203.)

4.2.5 The Basic Building Block Corporations of Universities: Nations, Faculties and Colleges

Starting from the Middle Ages, universities began to develop organisational structures: nations, faculties and colleges, with similar corporative rights and organisations, the nature of which often determined the character of the whole university (Gieysztor 1992, 109). These three ‘corporations’ have thus had a fundamental effect to the organisational structures of also later universities, as the basic ‘building blocks’ of their formal organisation. In Mintzbergian terms, these three started to widen the operational core, even as the middle line remained very short. It is thus prudent to have a look at the ancestry of each.

The *student nation* was the first organisation to internally structure and shape the medieval universities. It arose spontaneously, through the efforts of students or students and masters; later it was introduced into newly founded universities. In Bologna, the nations organised themselves as students’ *collegia*, associations of non-Bolognese apprentice-scholars and coalesced into two ‘universities’: *universitas ultramontanorum*, the Ultramontan for non-Italians, and *universitas citramontanorum*, the Cismontan for Italians. By the late 1200s, Bologna had four nations native to the Italian peninsula and its nearby islands, while its non-Italian nations were the French, Spanish, Provençal, English, Picard, Burgundian, Poitevin, Tourainian, Norman, Catalanian, Hungarian, Polish, German, and Gascon. The teachers and students born in Bologna did not belong to the nations, because it was supposed that people of local origin did not need a nation to protect them. Professors formed their own corporation, a *collegium doctorum*, with only ceremonial authority. Power was exercised through the nations’ students: they hired and fired the teachers, fixed their salaries, required professors to swear obedience to whatever statutes were enacted, granted leaves of absence, and in other ways controlled the academic life. The nations thus exercised near complete control over all facets of the institutions forming a *studium generale* together. In Bologna and other ‘student’ universities, the *studium generale* was thus a cluster of *universitates*, each of which was often for students of only one discipline and divided into nations, based on the students’ geographical origin. However, not all universities moulded on the Bologna archetype embodied a structure of nations in its entirety, because many universities recruited too regionally to need such a complex structure. After reigning for centuries, student corporations declined as faculty guilds ascended, and most future power struggles involved teachers against officials of the supporting states and of the church (Clark 1977, 10). (Gieysztor 1992, 109–110, 114; Lucas 1994, 44–47; Rüegg 2004, 20.)

Among the Parisian type of universities of northern Europe, a pattern of control by faculties evolved early and nations were organised differently. In Paris, only the arts faculty had nations, which constituted themselves right after the university was founded, also on the basis of geography: teachers and students were grouped according to their ethnic and linguistic affinities (Durkheim 1977, 97). In central Europe, the Paris model of nations was followed in most respects. For instance, in Prague, four nations (Czechs, Poles, Bavarians and Saxons) included all the students. The strength of the nations varied from one university to the next, but they all had almost the same organisation. In the medieval universities of Oxford and Cambridge, the nations had only a peripheral standing (Cobban 1988, 103–106). Oxford was never as international as Paris, being mainly visited by scholars from England, Scotland and Ireland, and national divisions were not as strong as they were in the big universities of the continent. In Oxford there was a northern and a southern nation following the Parisian model, but in 1274 distinct nations were abolished. (Buxton & Gibson 1935, 145–149; Gieysztor 1992, 114–115; Pedersen 1997, 205.)

The *faculties* became the predominant corporative divisions and organisational structures to divide the majority of medieval universities between the different disciplines. Besides its old meaning of a discipline or field study, from the mid-13th century onwards, *facultas* meant a body teaching a discipline, i.e. arts, law, medicine or theology. Although there were others, the ‘classical’ Parisian model of the four faculties, out of which the arts faculty is ‘lower’ and the others theology, law and medicine are ‘higher’ faculties, was predominant. According to Durkheim (1977, 89), even the faculties at Paris did not establish themselves as clearly independent entities before the 15th century. Much of the early ‘administration’ of the universities – as no Mintzbergian support staff or technostucture parts yet even existed – was done by the faculties particularly at universities which had no nations or at which nations were not important. The Paris model was adopted by the *studia* of north, western and central Europe, and by the German universities founded in the 14th and 15th century, but most universities were not as complete as Paris. Especially in the Bologna archetype of organisation, the university and faculty were often synonymous. In Bologna, there were the original legal and to some extent medical schools, whereas the faculty of theology was introduced only in 1364. Neither did other Italian universities have theological faculties at the beginning. (Gieysztor 1992, 109–112; Verger 1992, 40; Pedersen 1997, 204.)

In time, another university corporation, the *colleges* developed into evolutionary units that reformed the medieval universities and came to surpass the nations and at times even the faculties in importance: the collegiate establishments sometimes determined the organisational structure and management of the whole university or faculty (Gieysztor 1992, 116). The college was not the only designation for such a corporation: also the English *halls* (Oxford) and *hostels* (Cambridge), the Parisian *hospitia*, hospices or *paedagogia* and the *bursae* of the universities of the Holy Roman Empire became equivalent genuine

organisation structures of universities, often later designated as colleges. The word college, derived from *collegium*, which is sometimes also used for faculties and/or nations, referred to the scholars who lived in the halls, later called colleges. (Cobban 1988, 145–160; Schwinges 1992, 219; Sager 2005, 281.)

The first colleges appeared at the end of the 12th century, as modest pious organisations, serving to provide shelter for students in the midst of other ‘poor clerics’. The oldest was the Collège des Dix-Huit, established in Paris in 1180 (Pedersen 1997, 226; Cobban 1988, 114). In England, similar halls and hostels existed early, providing basic shelter and lodging, but not teaching. The later ‘genuine’ colleges differed from halls in being corporate bodies enjoying legal privileges, with a permanent financial endowment, usually in the form of land, provided by the founder. The Parisian idea of actual colleges was ‘borrowed’ by the English in the 13th century, when the expansion rate of universities was beginning to pose a serious problem. Before 1300, nineteen colleges were founded at Paris, six at Oxford and one at Cambridge. By 1400, 37 more were founded at Paris, five at Oxford and seven at Cambridge. The Oxbridge colleges were always relatively independent of their universities, whereas their counterparts at Paris were dependant on the authority of their university. Colleges spread in the 14th century to southern universities, but never became as important there as in north and western Europe (Grendler 2002, 169). For example Italian students always had close ties with the towns, lodging with the townspeople and sharing their living conditions. The colleges in Bologna did not provide teaching and supplied lodging, board and financial assistance only to a few students. (Green 1974, 7–9; Durkheim 1977, 101–124; Cobban 1988, 115–116, 128; Gieysztor 1992, 118; Verger 1992, 60–61; Pedersen 1997, 226–230; Anderson 2006, 2; Evans 2010a, 5, 105–106; 2010b, 101–104.)

The mode of organisation of colleges took its inspiration from the mendicant monasteries, established as early as the 1220s within the universities, for the use of students belonging to these orders. Latin was the language for all European scholars, while Greek philosophy and Christian morality were the spiritual basis. The *collegium* as an institution was close to the church even down to its architectural shape, being similar to the monastery and the collegiate church. The physical configuration of the college, buildings grouped in a square around a central court and including a dining-hall, living-rooms and bedrooms, a kitchen and cellar, a lecture hall, a library, and a chapel, was to leave a decisive mark on the universities as institutions. Also, in the 13th century, the faculties and organs of the university did not have buildings of their own: faculty and nation meetings took place in a church or other borrowed facility (Durkheim 1977, 89; Pedersen 1997, 196, 211–212). In 1445, the entire university at Paris was said to be situated in its colleges, and this was equally true for Oxbridge. By then, even non-college members attended college courses. The faculties just organised examinations and awarded degrees. After the Reformation of the 16th century, many colleges managed to survive the dissolution of the monasteries due to their

status as being privately founded. In Britain, the autonomy of Oxbridge colleges was guaranteed by royal decrees and acts of parliament. (Schwinges 1992, 213–215; Lucas 1994, 65–67; Sager 2005, 12, 248.)

The constitution of the colleges was essentially no different from that of the other organisational units of the universities. They took care of their privileges and statutes and ran the administration. Whoever their founders were, whether princes, important officers, ecclesiastical dignitaries or regents, the colleges often bore the stamp of their founders' ambitions or were their status symbols. The colleges of the 14th and 15th centuries were regarded less as lodging houses for poor scholars, and more as privileged institutions serving to guarantee their members the best conditions for work and study. Some colleges evolved into genuine teaching institutions with newer and more progressive teaching methods, and were able to compete with the faculties, whose role tended to be reduced to the conferment of degrees. (Aalto 1968, 128–129; Green 1974, 7–8; Gieysztor 1992, 117; Schwinges 1992, 215; Verger 1992, 61–62.)

The colleges made the university of the Middle Ages a special kind of institution. They were founded as purely secular corporations with the hallmarks of such institutions, not as religious fellowships. They thus lacked the monastery's fundamental points: the aim was study rather than prayer. This gave the collegiate movement a seminal impact on the organisational evolution of universities. At Paris and Oxbridge the colleges became the chief sources of student support in the faculties of law, theology and medicine. Along with the Franciscan and Dominican orders, they maintained generations of the universities' most talented scholars, enabling them to realise their academic potential to a high level. By the mid-16th century, the teaching had been mostly centred in the colleges, rendering them self-sufficient educational units. This above all transformed Paris, Oxford and Cambridge from being universities of a centripetal nature to being those of a centrifugal one. In its mature state, the secular medieval college was an autonomous, self-governing legal entity, solidly endowed, and possessing its own statutes, privileges and common seal. This was usual in England, but many colleges, especially the unpretentious institutions in France and Italy, which were little more than students' lodging houses, did not progress far towards this fully-fledged model. (Cobban 1988, 111–112; Pedersen 1997, 229.)

4.2.6 Similarities and Differences in the Organisation of Medieval Universities

As hitherto described, the medieval universities in Southern Europe grew using the Bolognese model and in Western, Central and later Northern Europe using the Parisian model. The Parisian organisational structure was in many ways standard and usual, but there were also frequent deviations and variations from it (Pedersen 1997, 204). Still, Mediterranean Europe was the first universities' favoured terrain, because of its traditions of written law and earlier progress made there by lay elements in society. Italian

universities differed from those in Central Europe and Spain: they concentrated on law and medicine; to them arts and theology were of less importance than in the Ultramontane (literally those located on the other side of the Alps mountains) universities. Also, the lectures of Italian universities were public and open, while most teaching at Paris and Oxbridge took place in closed colleges combining residence and teaching, the likes of which did not even exist in Italy. (Verger 1992, 56; Grendler 2002, 4–5.)

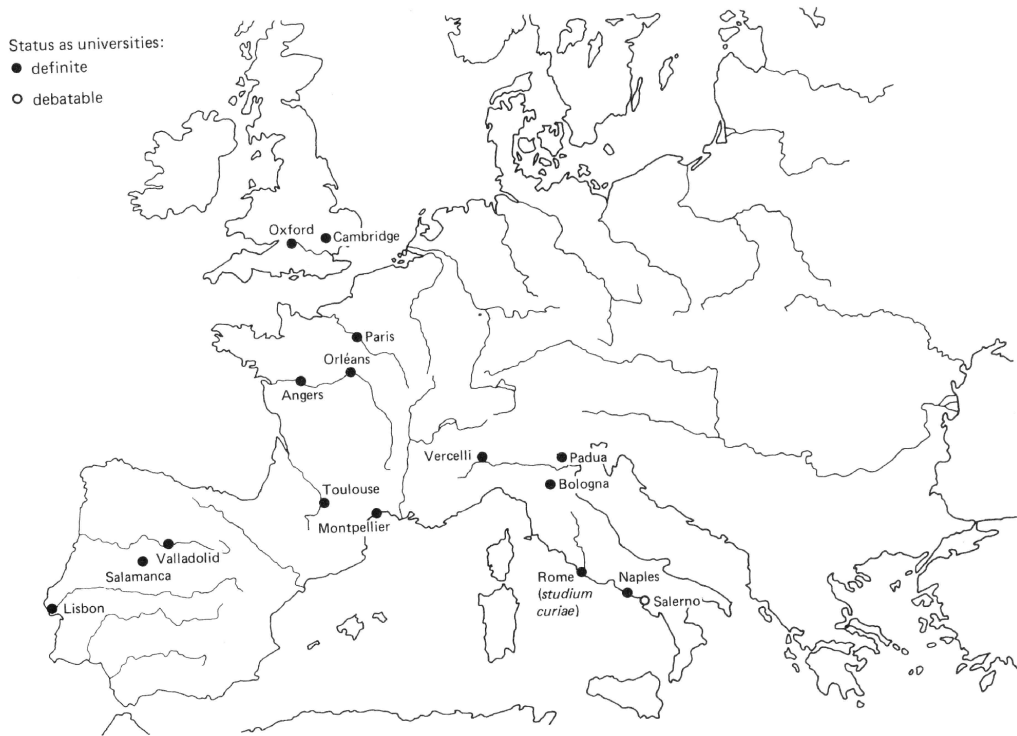


Figure 6. Universities active in Europe in the year 1300 (adopted from Verger 1992, 70).

The early medieval universities are presented in Figure 6. *New universities were created by filiation, following the model of a paragon university*, like Oxford was based on the model of Paris (Green 1974, 8; Klinge et al. 1987, 80; Pedersen 1997, 205). As noted in 1.2, *the movement for the creation of new universities spread from Italy and France to Spain and England in the 13th and 14th centuries, and to entirely new lands to Central, Eastern and Northern Europe in the 14th and 15th centuries*. In the east, a turning-point was the founding of the University of Prague (the current Charles University) in 1347. Up until then, the Holy Roman Empire and Central Europe had remained without universities. This was probably because of the nobles, who were able to send their sons to study in Paris or Bologna, had little desire to see universities emerging in their area, because that would have enabled the bourgeoisie and the peasantry to enter with opportunities for social climbing, while reinforcing the political weight of the church and towns against that of the nobility. Yet economic development and the awakening of national

sentiments increased the pressure to create new universities. With the help of the pope and the emperor, a university was founded in Prague with considerable success, which then led to the founding of several imitations in Central and Eastern Europe. In coming to the 15th century, the empire had universities in regular operation already in Prague, Vienna, Heidelberg, Cologne and Erfurt. Nine more were founded during the 15th century, newly including the Baltic Sea region, when Rostock was founded in 1419 and Greifswald in 1456. In Northern Europe first came Uppsala in 1477 and Copenhagen in 1479, both then belonging to the Nordic Kalmar Union. (Verger 1992, 56–57; Lucas 1994, 80–81; Le Galès 2002, 39.)

Modern universities have developed distinctive forms of organisational structures and governance with significant contrasts. Yet they all emerged from medieval paragons, from which the roots persisting in university traditions can be found. A fundamental theme is the university as a self-governing community of colleagues, held together by loyalty to each other and to the institution. There would be a head, but he would be first among equals. The collegial idea of such a community comes from the monastery and the guild, and fits well with the Mintzbergian theory that in universities as professional bureaucracies, the operating core, composed of professional scholars and teachers, is the key part of the organisation and the locus of the academic work itself. The universities managed to bring about a structure allowing corporations of scholars and teachers to govern themselves, with the help of academic officials, elected by and from the university's own members (Pedersen 1997, 209). The *studium generales* also had papal or imperial charters authorising them to confer degrees. Only the combination of charter and advanced teaching made a functioning university. One could therefore assume that charters and statutes are the best source of knowledge of the organisational structures and governance of the medieval university. This is not the case, however, because very few university documents have been preserved from the 13th century (Gieysztor 1992, 113). More is known about the authorities and academic officials of the medieval universities. They could deepen our understanding of the governance and organisational structures of universities beyond the building block units that make up those structures. In my primary data (see 3.2), there is extensive information also about the academic officials of the universities, spanning their historical development from medieval paragons to the present day. However, since not directly connected to the organisational structures of universities, I have delimited them out of this research. For those more interested, see my comparative article (Aniluoto 2017) covering the vivid spectrum of academic officials, also based on my primary data. (Ross 1976, 160; Grendler 2002, 3–4.)

Most medieval universities had considerable self government and autonomy. They had developed a range of academic officials, academic *senates* and university *councils*. The German and Nordic tradition was to have both a great and a small university senate. The former consisted of all permanent professors, and made only the more important decisions, elected the rectors etc., while the latter consisted only of some

of the professors representing the faculties and had influence over the day-to-day affairs. In the English universities, the supreme organ was *convocation*, in which all graduates are eligible members, but which had powers limited to expressing opinions on matters relating to the university and nomination of some of its members to decision-making bodies (Buxton & Gibson 1935, 49–66; Burn et al. 1971, 67–69). There were also *congregations* in British universities, composed of the teaching and administrative elements of the universities (Buxton & Gibson 1935, 49–64). There were also already medieval examples of universities with very limited self-government or autonomy. The Imperial University of Naples, not established from existing schools, but founded by Frederic II in 1224, had the absolute minimum of self-government, for the university was entirely subject to the king, who ruled it through his own chancellor, who also conferred degrees in the king's name. Naples was thus the first HEI totally under state control from beginning to end: with no real academic freedom or independence for either scholars or teachers. (Burn et al. 1971, 178, 209; Blegvad & Jeppesen 1975, 181–182; Durkheim 1977, 93; Peisert & Framhein 1978, 19; Pedersen 1997, 206–207; Remy 2002, 247; Bonaccorsi & Daraio 2007, 245.)



During the Middle Ages, the importance of universities cannot be exaggerated: the about eighty universities of the medieval period shaped the intellectual development of Europe more powerfully than any other institution, and acted as centres of learning and an oasis of intellectual freedom, in an age profoundly suspicious of heresy (Lucas 1994, 68). The medieval universities were distinguished by privileges, out of which autonomy was paramount: universities were recognised as having the right to act as a corporate body towards the outside world, to supervise their teachers and students, and to lay their regulations and enforce them by exercising internal jurisdiction. With the development of early modern society and impulses towards more state control, greater territorial consideration and increasing reliance on written procedures, the importance of the universities from the late 15th century onwards was enhanced. Princes, magistrates, churches and authorities developed a direct interest in ‘their’ universities. The self-government of the universities, reflected in freedom of movement in face of state and church authority, declined but did not disappear. Because of the centralisation and state penetration of everyday life of the period, universities continued to enjoy greater opportunities for autonomous development than would be the case in the 19th century, let alone later. (Gieysztor 1992, 108; Hammerstein 1996, 150.)

The universities existing in the beginning of the early modern period of the 16th to 18th centuries are presented in Figure 7. During the period, the founding of new universities grew the population, but from the point of view of the universities’ organisational structures and governance, no profound changes occurred. The fundamental Parisian and Bolognese university models continued with modifications (Evans 2010b, 88). *Practically all new universities were still created by filiation, taking a model from an existing paragon university, and the organisational structures of the older and more respected universities were copied into newer ones and adapted into local conditions.* The Parisian and Bolognese models interacted and influenced one another, and their organisational elements were often combined in newly founded universities. It can thus be concluded, at least for the purposes of this study, and while remaining conscious of the limitations of the university models as tools (see 4.1) that *the Parisian and Bolognese university models converged into a unified, pan-European university model.* Until the French Revolution, *European universities, although divided by their dependence on Catholic or Protestant sovereigns, were organised in similar ways and taught the same branches of knowledge in the classical faculties.* The structure and content of higher education converged to a point that Rousseau complained in 1772: *‘There are no longer any French, Germans, Spanish or even English, in spite of what they say: there are only Europeans. They all have the same tastes, the same passions, the same morals, because none of them has received a national moulding from a particular institution.’* Yet the uniformity of universities was subject to pressure from the 16th century onwards: the states and other political entities gradually grafted new institutions onto the medieval prototypes, while not radically reshaping them before the 19th century. (Ridder-Symoens 1996, 154–155; Lampinen 2003, 9; Rüegg 2004, 4.)

4.3.1 Expansion, Differentiation and Professionalisation of European Universities

According to Charle (2004, 55) and Frijhoff (1996, 79–80), *the development of universities in the early modern period may be summed up in three words: expansion, differentiation and professionalisation*. The number of universities grew, but slowly and unevenly. In comparing the density of universities with that of the population, Italy, Scotland and the United Provinces (Dutch Republic) were areas rich in universities. Areas like France and Scandinavia enjoyed an average number, while England, the Austrian Netherlands, Portugal and Ireland brought up the rear, both in absolute numbers and compared to the population (ibid., 77–78). Also, Central and Eastern Europe were very thinly populated with universities. The Thirty Years War, Turkish invasions and periods of occupation hindered the progress of scholarship. It was religious and ethnic rivalries, the emergence of national and liberal movements, the education of local elites in the western universities, the creation of new states, and the struggle to overcome Western Europe's lead that gradually filled the blank spaces of the eastern university map. (Charle 2004, 40–41.)

Period	Universities founded, restored and modelled			Universities abolished, transferred and merged
	Catholic	Protestant	Total	
1501–1550	22	4	26	3
1551–1600	31	16	47	3
1601–1650	14	10	24	3
1651–1700	5	7	12	12
1701–1750	10	2	12	13
1751–1790	13	3	16	16
Total	95	42	137	50

Table 2. Universities founded, changed and abolished 1500–1790 (adopted from Frijhoff 1996, 71).

Differentiation of universities in the period often had ecclesiastic connotations: even though they copied and mixed the elements of the medieval university models, the newly-founded universities themselves became paragons to a time of confessional families of universities: Catholic, Lutheran or Calvinist, and their subfamilies. For example, the Scottish universities, drastically reorganised in the 16th century, are distinguishable from their Calvinist counterparts in Holland of the period by their collegiate structure – the college was the whole university – coupled with an administrative faculty system. Still, European universities were never purely religious bodies, but also depended on the protection of the state and served secular interests, particularly in England (Anderson 2006, 2). The Spanish and French collegiate universities had different function for their colleges. The Spanish were also easily kept under control by the authorities, while the French were not. In Italy, the regionalisation of universities diminished the

significance of the student nations considerably from the 17th century onwards. The colleges were given another function, implying changes in organisational structure. Some universities tried to develop the 'new learning' and the scientific revolution in their existing faculty structure and curriculum: professorial chairs were reallocated, classrooms adapted, anatomical theatres, observatories, botanical gardens, laboratories and libraries became 'musts' for the well-run university. The university system reached its highest pitch of complication when a supranational paragon, like the many Jesuit universities, was followed in all Catholic countries. The development of the population of universities during the early modern period is summarised in Table 2. (Frijhoff 1996, 53; Ridder-Symoens 1996, 154–155.)

Although some professionalised universities appeared quite early, until the end of the 18th century, the purpose of higher education was not to train students for a variety of specialties but to transmit the classical intellectual heritage. Even as the Parisian four-faculty paragon was still the dominant one in the filiation of new universities, it diverged into three more professionalised forms, each with variations: 1. The professorial university of teachers to train specialists, based on discipline-grouped faculties with centralised teaching, and awarding degrees precisely describing their content. 2. The collegiate or tutorial university, based on the Oxford paragon of a federation of autonomous colleges of both masters and students, and decentralised teaching. Faculties existed, but teaching was conducive to generalist knowledge. 3. The intermediate or a smaller college-university, combining the advantages of central organisation and infrastructure with small size and the collegiate-type of education, which was efficient in controlling students and studies. (Frijhoff 1996, 65; Ridder-Symoens 1996, 155; Ben-David 2002, 10.)

4.3.2 The European University Model Spreads to the Americas

Nothing remotely resembling a university existed in the New World before Europeans settled there, but by the end of the 18th century, numerous universities and other HEIs could be found in the Americas. In the 16th to 18th centuries, Spanish settlers in South and Central America as well as their British and French counterparts in North America started to follow European university models and organisational structures. The early modern North and South American university models were thus imported from Europe. In the Spanish Empire, a metropolitan pattern was the norm throughout the colonial period: Salamanca, the most ancient and prestigious of Spanish universities, was the leading paragon in South America, although the new universities could, due to a lack of teachers and resources, be only miniature Salamancas (Kerr 1995, 16). The paragons for North America were more of a mixed bag. The English-speaking North Americans adopted an amalgamation of all the paragons available: from Oxbridge and the Scottish universities, and by the 18th century, from the dissenters' academies in England. The Francophone settlers took their paragons from Paris, the Jesuit colleges and theological seminaries. Yet

the Oxbridge and Paris paragons were not practical choices, because neither the English nor French Americans could raise the resources for such elaborate and costly institutions. By 1800, Central and South America had taken their models of universities from Spain, and North America from Great Britain. The later establishment of new universities outside Europe in the 19th and early 20th centuries continued the pattern under new circumstances. (Roberts et al. 1996, 256–260; Shils & Roberts 2004, 163–164.)

4.4 The Competition of National University Models (from the 19th century until about 1945)

The 19th century was the age of the nation state, and historians and theorists of nationalism have emphasised the importance of universities throughout Europe, in integrating modern nations and forming their identity and national consciousness (Anderson 2006, 87). Philosophers, scholars and administrators initiated the modernisation of universities in France, Germany and Britain (Ben-David 2002, 12). In the 19th century, the pan-European university model diverged into several competing national university models, which opened the way to a fundamental reform of the universities. Out of these, the French and the German models had a vast impact. (Rüegg 2004, 4.)

The French Revolution and Napoleon's conquests devastated the European university landscape. In 1789, it had 143 universities, but by 1815 only 83 remained. 24 French universities had been abolished and were replaced by special schools and isolated faculties. In Germany, eighteen of the 34 universities had disappeared; in Spain only ten of the 25 had any life in them. After new universities were founded, Europe had 98 universities by the middle of the 19th century. On the eve of the Second World War in 1939, this figure had increased to around 200. These were accompanied by about 300 other HEIs in the military, (poly)technical, commercial, medical, veterinary, agricultural, educational, political and musical fields. But they had not replaced the universities, which is astonishing, as the replacement of universities by professional HEIs coincided with the dominant trend in the age of Enlightenment, to orientate higher education towards practical knowledge and useful careers for the public good. (Rüegg 2004, 3.)

4.4.1 The National French/Napoleonic University Model

According to Charle (2004, 44), in contrast with other parts of Europe, where the universities' organisational structures dating from the medieval period remained in place upon entering the 19th century, the French Revolution caused the French university system in the first half of the 19th century to be organised, mostly on a *tabula rasa*. The French colleges and faculties of theology, medicine, law

and arts disappeared during the Revolution between 1789 and 1794: universities were linked to the newly established *départements* of the government and the *collèges* were abolished. The Empire imposed a straitjacket of bureaucratic administration, which allowed no room for university autonomy. In 1808, Napoleon reorganised the universities into a single national institution, *l'Université impériale* (the Imperial University, later *Université de France*, the University of France), directly administered by the government under a grand master in Paris. In Mintzbergian organisational structure terms, the operating core parts of universities were detached from their former university strategic apices (which were mostly abolished) and forced to become organisational units of the imperial government instead. Also, some universities were instead replaced by professional schools, like three for medicine, twelve for law in the whole of the Empire, and faculties of arts and sciences, two in every school area. In the Mintzbergian view, the operating core of such universities were divided into their organisational structure units, which were separated and made or reformed into independent faculties, schools or other HEIs. Some state HEIs became the *Muséum* while others and a number of specialist schools were founded and were given legal status and financial autonomy. In addition, national committees were introduced to represent the various disciplines to take care of the scholarly decision-making that until then had occurred in the universities. Such extraordinary fragmentation and specialisation explains the variety of French university landscape also in later periods, in contrast with particularly that of Germany. (Merikoski 1966, 18–19; Burn et al. 1971, 11; Gellert 1993b, 238; Kerr 1995, 18; Ben-David 2002, 15–16; Charle 2004, 34–35.)

In the national French model, higher education was dedicated to the training of civil servants and officers, and the academic professions were subordinated to a bureaucratic state administration and control (Rüegg 2011, 11). The special colleges were subjected to severe discipline and organised by an enlightened despotism that governed the curriculum and student life to the last detail. The model was implemented due to the Revolution and was given its final shape by Napoleon, although some key traits, such as a centralising state control, the isolation of the faculties and the establishment of special colleges, had been evident since the Age of Enlightenment. Napoleon's interest was not allowing the free flow of knowledge, but in conquering universities by division, because their traditional role could impede acceptance of his radical reforms. Two sets of institutions replaced universities, one devoted to teaching and the other to research. Hence, the *grandes écoles* were created as the most prestigious HEIs: higher professional public or private schools, a part of the French HES ever since. They have demanding curricula and train students to occupy senior staff positions in all sectors of society. Prime examples of *grandes écoles* included *les polytechniques*: high-grade vocational schools in law, medicine and engineering, while research was pursued in separate professional associations which subjected every new knowledge claim to a politicised voting ritual. One of the jewels of the national French model, the *Ecole Polytechnique*, was set up to train engineers and officers of the military artillery, and had a widespread

influence through its theoretical orientation. Even after the later restoration of universities in 1896, the *grandes écoles* kept ‘opposing’ universities by taking the most talented students, while universities were left with the rest. (Burn et al. 1971, 14; Bourricaud 1975, 232, 239; Bienaymé 1978, 1–2; Ben-David 2002, 16; Rüegg 2004, 3–5, 10; Anderson 2006, 29–30; Tirronen 2014, 56–59.)

From 1830 onwards, the failings of the Napoleonic system became evident. The double task of developing research in the faculties on German lines and of bringing the over-centralised organisation of the HES into harmony proved to be difficult. After other partial reforms, the reform of the organisational structure proved to be the greatest hurdle. Still, HEIs based on the ideas of the national French model were also introduced in other countries. For instance, the mining and engineering colleges, founded in the 18th century by the German, Austrian, Hungarian and Russian governments, and intended for the practical training of civil servants, were transformed into higher polytechnic schools in the 19th century, by introducing advanced theoretical teaching. But they did not adhere to the other aspects of the national French model, the discipline or state control. Instead they aspired to the basic rights of universities. The national French model stayed in force under successive regimes; only in the last third of the century it was eroded under the influence of the national German model, after the French had suffered a military defeat to the Germans in the Franco-Prussian War of 1870, which led to the fall of the second French Empire. Then in 1896, the French faculties were again brought together into sixteen universities, which then, as in Germany, were legal entities which could control part of their budgets, create or abolish professorial chairs and accept donations – in short, could initiate change themselves. Also, the national French university model, as it was later applied in France and other countries (see 4.4.6) was in many ways influenced by the national German model (see 4.4.7), but according to some historians, the original national French model was totally abandoned only in 1968, when the old *Université de Paris* was divided into thirteen universities, aimed at creating specialised channels in a range of disciplines in science and education. (Fuller 2000, 61; Karvinen 2002, 49; Charle 2004, 55–56.)

4.4.2 The National German/Prussian/Humboldtian University Model

The revolutionary and Napoleonic wars between 1792 and 1815 disrupted university development also beyond France. French conquest and occupation were usually accompanied by secularisation and the confiscation of church property, also destroying the financial independence of universities, abolishing their corporate privileges and making them state-dependent. However, in some countries, particularly in the German areas, university reforms had already been prepared. The political reaction to French rule was especially significant in the kingdom of Prussia. The Prussian university system, inaugurated in the foundation of the new University of Berlin, was expressly directed against the Napoleonic system. Berlin

became the largest German university, an intellectual powerhouse and a focus for national sentiment. The national German university model emphasised the ideal of togetherness of the masters with the apprentices, a close link between research and teaching and the superiority of the philosophical (arts) faculty over other faculties. This is a crucial distinction between the national French and national German models: in the former, the classical arts faculties were mostly divided by separating the natural science disciplines from the humanities disciplines, whereas in the latter, the classical arts faculties remained undivided and/or the humanities disciplines were unified with the natural science disciplines in the *Philosophische Fakultät*, the faculty of philosophy. (Charle 2004, 47–48; Anderson 2006, 28–29.)

The national German university model is often identified with the ideas of 19th century diplomat and scholar Wilhelm von Humboldt, even as this is historically an exaggeration or at least somewhat imprecise. Still, the Prussian HES was opposed to the national French model of higher education and the German reform movement consisted of philosophers and scholars representing Humanism, with idealism and moral influence from the likes of Schelling, Schiller, Hegel and Goethe, and the concept of *Bildung* – civilisation on a personal level. It also emphasised that universities must be reformed and moved to capitals and other relevant administrative cities (Klinge et al. 1989, 392–393). *The key idea was that universities must be research based institutions* (Lampinen 2003, 9). *Research must be free from immediate social concerns and education must be distinct from professional practice. The university must not pass on recognised and directly usable knowledge as the schools and colleges do, but demonstrate how this knowledge is discovered, and stimulate the ideas of science in the students.* The manner of study and the content of teaching were to be characterised by ‘freedom’ and extensive internal autonomy. This gave university autonomy new justification: self-administration through the *Ordinarien*, permanent chaired professors. The Prussian government also had a different role from that of the French or the British. German universities were closely tied to the state, and according to Weber (1909, 108) the new ideals could be born only due to a secularisation of the Church development of the times and the centuries of poverty. This prevented the founding of English-type state-independent private universities. All these factors led the German reform not to abolishing professional privileges, but sharing them in the establishment of a new type of autonomous university. Instead of diminishing the importance of universities, the reform reinforced their importance, thereby reversing the earlier trend to replace them with professional schools. (Peisert & Framhein 1978, 3; Gellert 1993b, 237; Ben-David 2002, 19–20; Rüegg 2004, 5; 2011, 11; Brandser 2006, 87–88; Niiniluoto 2011, 398–400; Aalto 2013, 118.)

The king of Prussia founded the ‘modern’ University of Berlin (the current *Humboldt-Universität zu Berlin*) in 1810, and as stated, it quickly became one of the leading universities of its time in research and education of scholars, and also the paragon of German Humanism for both existing and new

universities. For instance both the Imperial University of Alexander (the current University of Helsinki) in Finland and the University of Tartu (Dorpat, reopened in 1802) in Estonia soon took Berlin – the closest larger university in a capital city – as a paragon in organising their research and education, even though they themselves as universities were much older. According to McClelland (1988, 181–194), by 1900, Berlin’s university could arguably be the best in the world, at least in the scientific and scholarly prestige of its faculty members. However, also other German universities, including the ones at Leipzig, Göttingen and Halle, were nearly as equivalent competitors. Towards the latter half of the 19th century, the German university field could be considered far more balanced than for instance the French (where Paris dominated everything). Conant called the German system of higher education ‘the best system for the 19th century’ (Peisert & Framhein 1978, preface). *From the end of the 19th century, the national German model has profoundly influenced the concept of the modern university not only in Europe, but also in the United States, Japan and throughout the world.* (Klinge et al. 1989, 28, 393; Kolbe 1993, 476; Rhoades 2003, 29; Rüegg 2004, 5–6; Brandser 2006, 151–156, 343.)

Looking at the German HEIs in general, three types emerge: first the old, mostly medieval universities, all founded before the 18th century. Their organisational structures have developed from the classical faculties of theology, law, medicine and arts/philosophy, and they were reformed in accordance with the Humboldtian ideals. The second type consists of Berlin and the other universities founded after it. The third type are HEIs established to offer education in special areas like technology, medicine and economics. Some of these continue to exist as special institutions with university status, while others have been expanded into universities by adding disciplines. Independent faculties of natural, economic and social sciences were often also added to the older universities. The founding between 1900 and 1945 of a business university in Mannheim and three new universities with new faculties of social studies and economics, even a teacher-training section, show that there was an early awareness of the inadequacies of the ‘classical’ universities. But such hesitant changes were not enough to meet the social crisis of the inter-war period, when all reforms were blocked by the ideologically value-laden, hostile and terrorising science policies of the Nazi National Socialist regime towards the universities (see Peisert & Framhein 1978, 6–7; Möller 1986), although according to Remy (2002, 1–13, 234–245), many German scientists of the times also voluntarily supported, adopted and advanced these ideologies. (Charle 2004, 61.)

4.4.3 The National British/Anglo-Saxon/Newmanian University Model

According to Charle (2004, 53), to speak of British universities as a national ‘model’ is only possible in a metaphorical sense, for most of the characteristics of the English, Scottish and Irish universities were less the result of an explicit state policy than a compromise between centuries of tradition and long-

overdue partial reforms. The English universities traditionally had a strong interest in the personality development of their students. Unlike in France, where the universities were totally reformed by the post-revolutionary new government, in England the cooperation between universities and professional associations, supervised by the government, was maintained. Therefore, the HES reforms did not abolish professional privilege, but made it less invidious by dispersing it more widely than before. The state had indeed been interested in British universities ever since their foundation. In the early modern 16th and 17th centuries, rulers expected universities to instill political and religious orthodoxy, and intervened with a heavy hand when they did not. In the 18th century, the universities were left alone, but only because they were trusted to uphold the existing order. Since state and church were often in conflict, the universities could carve out a space between them (Anderson 2006, 2). The 19th century liberal state sought to emancipate thought from religious dogma, to expose national life to the power of public opinion, and to introduce principles of merit against the old power of birth and the new power of money. Oxbridge had always been embedded in networks of power through their graduates; this relationship was extended as they produced an administrative class for the modern national and imperial state, and an ‘intellectual aristocracy’ to temper democracy. However, following the liberal education ideals of John Henry Newman, *the distinctive feature in the British, so-called Newmanian tradition of universities, has been that the state has a very limited role in the administration of universities*, and even public university funding is not direct, but instead is channelled through separate joint agencies (Raivola 1994, 14; Coate & Mac Labhainn 2009, 198). *Otherwise, Newman’s modern interpretation of the national British university model concerned more how to organise liberal education in universities than how to organise their organisational structures.* (Gellert 1993b, 237; Ben-David 2002, 18; Anderson 2006, 187–188.)

The national British university model builds on the medieval Oxbridge universities. Even though Cambridge grew out of Oxford, it is clear to Cobban (1988, 17, 400) that Cambridge cannot be regarded as a mere derivative version of Oxford: even in the 13th century, Cambridge’s degree of indigenous evolution in organisational growth, legal status and innovative collegiate development is striking. Though Oxbridge forms a unique pair on the intellectual map of the British HES, the ‘non-identical twins’ are both a world in itself and worlds apart (Sager 2005, 11, 14). Both began as informal groups of scholars, but acquired privileged status, from king and pope, and were influenced by the medieval university of Paris (Anderson 2006, 2). Regardless, distinctively English has been the development of liberal education and colleges as the main organisational structures of universities, first providing subsistence for students and later as academic units. The Oxbridge universities still comprise dozens of independent colleges (see also Figure 8 in 4.5.5) representing disciplines, in an intimate relationship with the university, yet remaining in charge of their own affairs. Students must belong both to a college and to the university, whereas the academic staff must not necessarily. The relationship between the

university and the colleges has often changed, with the balance of power going with the balance of wealth. Some of the colleges have been wealthy compared to others and the universities as whole HEIs. The collegiate power is also demonstrated in the fact that above the colleges there is only a minor central administration and some ceremonial officials with various functions, all of which in terms of power can be considered weak. The decision-making processes and the administration are heavily collegial in nature. In Mintzbergian terms, both the strategic apex and support staff parts are thus undeveloped and the technostucture part hardly even exists. The collegiate tradition also means that British universities are normally not associated with single monumental buildings, like in the urban national German and national Russian models, but usually comprise of campuses of numerous buildings, still without a specific 'main' building above the others; if a tourist asks 'Where is the University?', their locus within the town is not clear (Knapas 1996, 45; Evans 2010b, 1, 53). The colleges as autonomous bodies are a character of Oxbridge, while the organisation of younger British HEIs varies considerably. For instance, the relationship of London's colleges to the University of London was always different, and many of them have since become independent universities in their own right. (Burn et al. 1971, 45; Bender 1988, 3; Tapper & Palfreyman 2000, 96; Evans 2010b, 54–55.)

The British university scene in 1800 was determinedly traditional: there were Oxford and Cambridge in England; St. Andrews, Glasgow, Aberdeen and Edinburgh in Scotland; Trinity College Dublin in Ireland; and none in Wales. These seven had kept the medieval autonomous corporations' structure and enjoyed greater privileges than their continental counterparts. Oxbridge and Trinity College Dublin represented the clerical collegiate type, provided with extensive financial backing and dispensing a humanist culture. The university level (strategic apex) existed mainly to award degrees. When the University of London was conceived in the 1820s, city-based universities had appeared in Germany and in the United States, so the question was not whether a new university should be founded in Britain, but where and of what type. Both the continental, particularly protestant universities of Germany, and Scottish universities, influenced by Holland of the time, modelled the new university (Anderson 2006, 28). The selection of London was appropriate, since only the capital possessed enough interests, strength and prestige to be effective against the Anglican Oxbridge monopoly. The University of London was founded in 1826 as a solitary college, and later became a degree granting institution for the entire British Empire. Since then the state has granted new universities almost total autonomy, enabling initiative and flexibility. Though the state did not take a directive role in this expansion, as in many other countries, from 1832 to 1905 the royal charter recognised 13 new universities, mostly in industrial centres. Tight (2007, 251–253) has elaborated a concise history of this 'relocation of the HEIs' development. These 'redbrick' or 'civic' universities were created as new alternatives, but not as rivals, to Oxbridge, which were governed with academic self-government through collegial forms, while these universities founded in the 19th and early

20th century had strong lay influence and minor participation by teaching staff. Founded and financed by wealthy individuals, groups and municipal authorities, they included medical, polytechnic and commercial disciplines. The Scottish universities depended more on state finances, but were otherwise independent of government as well. After reforms of Scottish universities in 1858 and Oxbridge since 1870, a national university system emerged before the First World War and state funding increased in all universities. The predominant pattern after the Second World War was a mixture of lay and academic government, first clearly outlined in 1870 at Owens College, Manchester. (Aalto 1968, 128–131; Becher et al. 1977, 64; Rothblatt 1988, 119–121; Anderson 1996, 114–115; Charle 2004, 36, 54, 62, 64; Rüegg 2004, 11.)

4.4.4 The National Russian and Soviet University Models

The national Russian university model was of western origin from the start (Klinge 2004, 123). The existing Russian universities rejected the national French college and specialist schools model, and instead adopted the national German model, a choice reinforced by the use of lecturers trained in Germany. However, the Russian state assigned its HEIs the function of providing its leading officials, like the French *grandes écoles* did (Charle 2004, 52). The foundation of universities by the emperor Alexander I was one of a series of reforms attempting to use western models to help Russia meet its needs and match the west. This is the Russian ‘university question’: the dilemma of having a western-type open university serve the Russian autocracy. One could have either a free university or the Russian autocracy, not both, for they were fundamentally opposed. This tension led to alternation between liberal phases, during which western ideas and political engagement were manifest in universities, and phases of repression and militarisation, like the students’ obligation to wear uniforms in 1835 to make it clear they belonged to the state administration, whenever the state felt it had allowed the reins to slacken too much (Charle 2004, 52, 66). The Russian universities were even personally controlled by the aristocracy, like that the University of Moscow was founded by empress Elizabeth, and has ever since had close ties to the top levels of both Russian and Soviet governments (Sadovnichii 2005, 9–21). The Russian university question is thus a history of failure of the originally western university models to realise their potential in the Russian political and social environment, because the state autocracy repeatedly and severely restricted the autonomy necessary for success. Nonetheless, many state servitors developed compromises, which kept the original liberal essentials included in the university reform. They achieved plenty of success by not accepting either horn of the dilemma: complete autonomy for the universities, or its opposite, complete subservience to the state. (Flynn 1988, 1–2, 18–19; Rüegg 2004, 10.)

In the Russian Empire, first a Slavonic-Greek Academy was founded in Moscow in 1687, following an Ukrainian paragon in Kiev. Like European Jesuit universities, both taught liberal arts, languages and

theology, with only the faculties of arts and theology. The lack of fully-fledged universities gave these academies great influence in providing training for a wide range of professions. Peter the Great founded an Academy of Sciences in St. Petersburg in 1724, linking three institutions together: an academy of sciences on the western European models, a university for the scholars of the academy to teach their disciplines at a high level, and a college or *lyceum* where the pupils of the scholars would transmit basic scientific knowledge to young people. The academy was made autonomous and renamed St. Petersburg University in 1747. The first Russian university named as such from its founding was Moscow (the current Lomonosov Moscow State University) in 1755. Like their German counterparts, Russian universities were founded in major cities instead of towns or campuses, were housed in specifically built monumental buildings, and were made important institutions for the state (Knapas 1996, 45; 1999, 12). In the early part of the 19th century, two more universities were founded in Russia and three were re-opened and/or expanded as imperial universities, as the Russian empire gathered new lands, mostly from the kingdom of Sweden. These included the geographical areas of contemporary Finland, Estonia and Lithuania, all of which already had universities that had been founded during the early modern period and were at the time affiliated with the national German model. Also, the St. Petersburg University was elevated to Imperial status in 1819, and between 1865 and 1909 three more universities were founded in Russia. (Frijhoff 1996, 48; Bain 2003, 129–130; Charle 2004, 35–36; Rüegg 2004, 680–681.)

Coming to the 20th century, political agitation was an indication that the autocratic university was not adapting to a society in the process of change. The revolts were triggered by the authorities' insensitivity towards student associations and by their attempts to force repressive measures. Agitation culminated in the revolution of 1905: the mobilisation started in universities. That the national Russian university model was no longer adequate to its social role is revealed by the fact that liberal ideas and reforms were also supported by the professors, who mostly came from the upper class and aristocracy. They had already embraced the ideals and successes of the national German model, whilst the autocracy was opposed to the freedom of study and research. The revolution of 1917 brought a total change. The Bolsheviks opened the universities, created an increase and change in student bodies and also new HEIs. By 1922, ten new universities and over one hundred specialist technical schools (notably outside Russia) were founded. As a relic of the Napoleonic model, the bifurcation of teaching and research remained. All Soviet HEIs were state operated and financed. Later the HES became part of economic planning, and preference was given to engineering and other applied sciences over subjects which were viewed with suspicion by those in power, and hence closely controlled. The academic elite was supposed to stem from the people, be technically orientated and politically reliable. Despite regime variations, Russian and Soviet university systems were authoritarian: rules and regulations extending from top to bottom, allowing little or no autonomy. (Burn et al. 1971, 277, 291; Bain 2003, 209; Charle 2004, 67–68.)

4.4.5 The National University Models Compared

Looking at the essential features of national university models, the most notable difference between continental and British models is the role of the state, which for the French, German and Russian/Soviet models has been one of strong external control (Raivola 1994, 14). However, in the national French model affiliated universities, the state controlled also the internal affairs of universities, whereas the national German model affiliated universities enjoyed a large degree of internal freedom despite the external supervision. By contrast, the Oxbridge-based national British model affiliated universities mostly have not been run as part of the state. Still, for example the University of London was a state degree granting HEI and the Scottish universities had stronger state relationships. Still, the on average greater autonomy and campus type of placement of national British model affiliated universities are reflections of the greater external freedom from the state, whereas countries marked by the Napoleonic stamp highlight the reverse: the medieval university of Paris had been founded and has always existed in the capital city. Napoleon's ideals of strong government even reinforced the idea that universities, state institutions under direct governmental control, but also an integral part of society and politics, should be located at the heart of the largest cities. This is visible also in the attributes of organisation: the continental universities were more centrally and managerially administered, comprised of faculties that were larger in average size (although usually also comprised of subunits), but fewer in numbers than the English universities' independent colleges and their strictly collegial and weak central organisation (Tapper & Palfreyman 2000, 96). (Eurich 1981, 4; Ridder-Symoens 1992, xxi; Anderson 2006, 187.)

Other major differences between the national models relate to the universities' orientation with respect to the individual, education and research. The French model emphasised collective training, the British model individual personality, and the German model research both collectively and individually. Isolating research into separate institutions outside the universities was a French feature, which the German model contested. In France, most research activity was concentrated at the *Centre National de la Recherche Scientifique (CNRS)* and other similar institutions, while universities had mainly teaching responsibilities, at least until the reform in 1968, promoting cooperation between universities and research organisations. As a relic of the national French model, many national public research organisations exist. Notable examples to accompany the *CNRS* include the *Max Planck Institut* in Germany, the *Consiglio Nazionale delle Ricerche (CNR)* in Italy and the *Consejo Superior de Investigacion Cientificas (CSIC)* in Spain. The national German model's greatest achievements were rejecting the French professional education colleges and modernising the medieval structure of the universities, which permitted the removal of the obstacle of the state to academic freedom. The later Anglo-American universities evolved from a 'more German' version of the British liberal education model, which demonstrated the importance of academic

freedom and corporate autonomy. The Germans opened the way to the modern research university by focussing the universities on the freedom of research, teaching and study. Competing against the French government-directed specialised schools, this opened the way for the victorious drive of the natural sciences, which led to a second renewal of the organisational structures. (Gellert 1993b, 243; Ben-David 2002, 124; Rüegg 2004, 14, 31; Bonaccorsi & Daraio 2007, 426; Pelkonen et al. 2010, 97–98.)

Based on my comparative overview of existing research and analysis of the historical development of the national university models in Europe, I will now summarise the key features and attributes of the historical national university models (from the entire 4.4 so far) in a condensed overview of Table 3.

University model	National French model	National German model	National British model	National Russian model
Ideal type from	Napoleon	von Humboldt	Newman	Alexander I
Organisational form and units	Single faculty, college or school	Several faculties and subunits	Several colleges and/or schools	Several faculties and subunits
Functions in	City	City	Campus / Town	City
Discipline specialisation	High	Low	Moderate	Low
Orientation in Education	Pronouncedly vocational	Research-based general (<i>Bildung</i>)	Liberal / General arts and science	Vocational / Elite-oriented
Orientation in Research	N/A (In separate institutions only)	Professional scholarship	Scholarship (not most essential)	Scholarship
Organised mainly through	Bureaucratic administration	Professorships (<i>Ordinarien</i>)	Independent Colleges	Bureaucratic administration
Internal Administration	Very strong, bureaucratic	Strong, collegial	Weak, collegial	Strong, bureaucratic
Internal Autonomy	Very low	High	Very high	Low
External Autonomy	None	Low	High	Phase-variable none / low
State Control	Very high	High	Low (Universities seen autonomous)	Phase-variable high / moderate

Table 3. The comparison of European national university models of the 19th century.

4.4.6 The Application of the National University Models in Other Parts of Europe

This subsection summarises from existing historical research the information regarding which and how each of the four dominant national university models were applied in each part of Europe, in order to

parse the overall 19th century development of the university models, and to lay a basis for their 20th century national HES adaptations (see 4.6). *During the 19th and early 20th centuries, the national university models were either adapted in, or at least strongly affected, the development of universities all around Europe. This coincided with the emerging European nation states and political turbulence. Both religious confessional and national or cantonal rivalries led to the existence of a disproportionately large number of universities. Governments rarely closed existing HEIs and preferred to meet social and political demands with new ones, designed for particular functions. The result was an unequal, arbitrary distribution of universities. On the fringes of Europe, Romania, Greece and Bulgaria afford examples of the simultaneous emergence of universities and nation states under powerful foreign influences, in the first case French, in the others German. In these small, rural states the foundation and development of a university in the capital of a young nation was a symbol of an independence which had been won little by little over centuries of foreign dominance. The same applies to Finland, Estonia and Lithuania under Russian rule, although their universities with national tendencies were not founded for the occasion, but reopened or reformed instead. (Charle 2004, 36, 38, 42; Temmes 2011, 284.)*

17th century Italy boasted fifteen universities, which all had similar organisational structures. However, they began to decline due to external societal forces, internal abuses and financial problems, until the great Renaissance era of Italian universities ended. Even though the entire university institution had begun in *Italy*, it *began to apply the national French university model in the 19th century*. Before the unification of Italy concluded in the 1870s, there were already 21 universities varying greatly in size and corresponding in no way to actual needs. Before the First World War, also elements of other national university models could be seen to exist together: the predominance of the professional faculties of law and medicine as in all Central Europe, centralised control as in France, orientation towards research as in Germany, and corporate organisation at a local level as in England. The restructuring of the university system was one of the main tasks of the new nation state, but it was all the more difficult. State-run HES reforms, like in France, had not proved possible, because of local interests in the Italian parliamentary system. (Clark 1977, 11–17; Grendler 2002, 1, 21–137; 476–511; Charle 2004, 36–37, 46–47, 70–72.)

The first *Spanish and Portuguese universities*, among the oldest in the world, had been modelled both on Bologna and patterns of their own (Gieysztor 1992, 111). They *turned towards the national French model in the 19th century but were also able to reform*, unlike the universities in Italy. Thanks to a political centralising tradition, the Iberian university scene was simplified by the gradual closing of old universities. In Spain after 1845, only ten universities remained at the head of school regions, formed on the model of the French *académies*. The university scene suffered from the overwhelming influence of the capital and the privileges of the ‘central university’: Madrid was the only university that could

award doctorates, and together with Barcelona the only that could contain all the faculties. According to Charle (2004, 72–73), in the second half of the 19th century, the Spanish universities, and those of other Mediterranean countries, were a long way behind their counterparts in the north, suffering from the Napoleonic model's legacy: excessive centralisation, very bureaucratic administration, a declining number of students and the lacking dynamism of professors with their civil-servant mentality. The 20th century brought reforms, and in 1931 the universities were given a genuine autonomy, especially in the regions. In 1943, a law brought a compromise between the Phalangists and the Catholic universities, which had to hold in high esteem Catholic morality and dogma, and together with Hispanism, authority and hierarchical order. This cementing of traditional values buried the earlier reforms until the 1960s. To sum up, the Spanish HES had a Napoleonic organisation and the universities were state regulated until the 1970s. The 19th century and the industrial revolution did not result, as in other countries, in the flourishing of new university institutions. (Charle 2004, 37, 46–47; García-Aracil 2007, 376.)

The Netherlands (Holland at the time) and the Belgian Departments became part of the French Empire in 1794, and thus subject to Napoleon's brutal policies and university model. By 1815, only three universities of Leiden, Utrecht and Groningen remained in Holland. After the defeat of Napoleon, Belgium and Holland became part of the same kingdom. The *athenaea*, universities without the right to award doctorates, were re-established in those provinces without universities. In Belgium, three universities were founded or reopened, to provide a counterweight to the three Dutch ones. Both the Dutch and Belgian systems took their organisational models for universities from France and Germany and were especially open to foreigners. In 1876, the *athenaea* were also recognised as universities, mostly because they already had a full range of faculties. (Charle 2004, 39–40, 65–66.)

Romania and Bulgaria applied the national French university model. Romanian universities were formed in Bucharest and in Iași in 1860, to reflect the independence struggle of the local elites from the neighbouring, German-oriented Austro-Hungarian educational centres. The universities were important politically, and as a small country with a Romance language, Romania remained oriented to France. Most of the professors and also a large proportion of students finished their education in the HEIs of Paris. In Bulgaria, the University of Sofia was developed in 1904 from an existing high school, and a private university, *Svoboden Universitet*, was created for students of diplomatic and administrative service in 1920, following the French model of *École libre de sciences politiques* in Paris. (Ibid., 42–44.)

Switzerland is an example of a trouble-free university reform and an amalgamation of both the national French and national German university models during the 19th century. The Swiss system was not unified, since the universities were institutions of the cantons (the Federal Polytechnic in Zürich being

an exception), whose authorities and politics intervened in the running of the universities. Some were oriented towards France, some towards Germany. In 1910, there were seven Swiss universities for only 3.75 million inhabitants, out of which four were for the 800 000 French-speaking Swiss and foreign students. They were the older *académies* of the national French model type, high schools transformed into universities with a particularly French type of organisation structure. In the German-speaking part of the country, a similar conversion from theology schools under the German influence took place, in Zürich and in Bern. Also, the University of Basel had existed from 1459. (Ibid., 38, 68–69.)

In Central and Eastern Europe, Austria was best provided with universities, seven before the end of the 17th century. The 19th century brought just one more, the splitting of the University in Prague to separate German and Czech universities. *Because of the common German language, Austria followed the Prussian model, while adopting a more traditional and authoritarian form of it than in Germany.* Except for the medical faculty in Vienna, Austrian universities were obsolescent in their scholarship. In Hungary at the beginning of the 19th century, there was only one university awarding doctorates, the Nagyszombat/Trnava, which was moved to Buda and finally to Pest in 1784. The Austro-Hungarian Empire and later independent *Hungary applied the national German university model*, while both had also some features all the way from the medieval Bolognese model, like surviving student nations and doctoral colleges. Towards the end of the Empire and later in Hungary, new universities were founded, but the impoverishment and isolation of Hungary in the inter-war period made the survival of a large university system difficult. (Gevers & Vos 2004, 293–294; Charle 2004, 41, 51, 64–65.)

Both Greece and Turkey followed the national German university model. The kingdom of Greece was determined to strengthen national consciousness with a university, founded in Athens in 1837. It had the classical four faculties, followed the Prussian model, and served as a bridge to the Greek diaspora in the Ottoman Empire of the 19th century: more than 40% of the students were born under Turkish rule. After their studies, they kept the Greek spirit alive in their homelands, until a unification with the motherland was achieved in 1913. Up to the First World War, Turkish higher education was based on the Osmanic *medressas* founded in the Middle Ages. Relations with Islam and the European universities had been important in earlier centuries, but the 19th century traditionalism blocked attempts at modernisation. It was difficult to establish a European-style university: *Darülfünun-i-Osmani*, the House of Scholarship opened in 1863, but was closed and reopened twice before becoming a university college in 1900 and expanded to Istanbul University in 1924. A system of German model universities was introduced into Turkey during the 1930s, also with a majority of German professors. (Charle 2004, 43–44.)

The early Polish and Baltic universities were founded during the Jagiellonian dynasty in Kraków in 1364

and during the Polish–Lithuanian Commonwealth in Vilnius in 1579 and Lwów in 1661. These were the only universities until 1795, when Poland was divided up among the neighbouring empires (Szczepański 1978, 1). A most severe repression of universities was during the period of Russian rule of Poland. After the revolt of 1830, the University of Warsaw remained closed from 1831 to 1862, during which time all Poles who wished to study had to go to Kiev or St. Petersburg. Later, in Prussian Poland there were no Polish universities, and the development of Polish scholarly life had to battle against the pressure of the German influence (Gevers & Vos 2004, 334–335). Humboldtian ideals and structuring universities along Prussian lines had a strong influence on the Polish HES. After Poland gained independence, the Polish HES rose like a phoenix from the ashes: with 13 HEIs in 1920 and raising to 32 HEIs before the Second World War. From 1939 to 1944, the Polish HES was totally destroyed: all HEIs were closed (or transformed into German, Ukrainian or Lithuanian HEIs), academic staff dispersed and 750 professors and teaching staff died on battlefields, prisons or concentration camps. Despite repression, a system of underground higher education was created: a unique experiment in the history of higher education. After the war, a socialist HES was set up in Poland. The university institution spread to the Baltic countries from Germany. However, since the area went under Russian rule in the 19th century, the national Russian university model had a permanent impact on the few HEIs. Alexander I expanded the existing Vilnius and Tartu (Dorpat) to Imperial universities. In 1939, the Baltic countries fell under Soviet rule, which imposed its socialist HES on all universities. *It can be summarised that the Polish and Baltic universities applied both the national German and the national Russian university models, and later a Soviet HES model.* (Szczepański 1978, 1–6, 19–22; Charle 2004, 42; Rüegg 2004, 680–681.)

Higher education had come to Northern Europe through the two 15th century universities founded in the Nordic Kalmar Union (at the time): Uppsala and Copenhagen, which had applied the Parisian model with the classical faculties, but after the Lutheran Reformation, started to follow German paragons instead. Copenhagen copied Wittenberg, while Uppsala and the newer universities based on it also adopted German organisational structures (Hammerstein 1996, 147). Using Uppsala as a paragon, universities were founded in the 17th century to express the nationalism and imperialistic ambitions of the developing Swedish kingdom: Tartu (Dorpat) for the then Baltic provinces of Sweden, Turku (the current University of Helsinki) for Finland, and Lund (a Franciscan *studium generale* had existed there in the 15th century) for Southern Sweden – then recently captured from Denmark (Knapas 1999, 12; Sörlin & Törnqvist 2000, 75). Norway had been a part of Denmark, Finland a part of Sweden and Estonia a part of both in the course of their history, but Sweden lost Finland and Estonia to Russia. After having gained autonomous rights before their independence, both *Norway and Finland developed their universities in the 19th century by applying the national German model and Finland also the national Russian model.* Based on the paragons of the universities of Copenhagen and newly-opened Berlin, the Royal

University of Frederick (the current University of Oslo) was founded in 1811 and served as a centre of Norwegian nationalism, until independence was achieved in 1905 (Kyvik & Ødegård 1990, 10). After Finland became an autonomous grand duchy of Russia, the Academy in Turku was moved to Helsinki, and expanded to the Imperial University of Alexander. Also this university held Berlin as its new paragon for research and education, while serving as a centre of nationalism through repressive Russian policy phases, until Finland gained independence in 1917 and the university was renamed the University of Helsinki (Gevers & Vos 2004, 335–337). *It can be summarised that the universities of Sweden and Denmark applied the national German university model in the 19th century.* After Uppsala and Lund, in the wake of industrial capitalism of the 19th century, practically-oriented private institutions were founded in the largest cities of Sweden. In Denmark, just three universities after Copenhagen were founded between 1928 and 1974, but starting from the 19th century, specialised technical, business, veterinary and pharmaceutical HEIs were also founded (Blegvad & Jeppesen 1975, 181; Kyvik & Ødegård 1990, 8). Similar vocational HEIs were founded from the 19th century onwards in Norway and in Finland, consistent with the national German model (Juva 1970, 35; Kyvik & Ødegård 1990, 10). (Burn et al. 1971, 197; Premfors & Östergren 1978, 3–4; Klinge 1996, 16–17; Charle 2004, 40.)

As already indicated, *Scotland, Ireland and Wales followed the national British university model as integral parts of the British Empire.* It is striking that as late as the beginning of the 19th century, there were just the two ancient universities in England and one in Ireland but none in Wales, whereas Scotland had four. The three 15th-century Scottish universities of St. Andrews, Glasgow and Aberdeen were magisterial (per the Parisian model) in form, but incorporated interesting features also from the Bologna model, including a rector, whose election was by the students – a relic of the Bolognese students' university (Anderson 2006, 1). Ireland got its first university, Trinity College Dublin, in 1592, though called 'college' for reasons of modesty: a single-college institution just in order to get it funded from the crown, mostly based on the paragon of Cambridge (as were also later Irish universities) and Anglicanism (Luce 1992, 1–8, 14). The rest of the Irish HES and the first Welsh universities were created at the end of the 19th and beginning of the 20th century, through expansions of existing British university colleges into universities (Robinson-Hammerstein 1996, 162–163). (Cobban 1988, 17.)

4.4.7 The National German University Model Prevails and Affects All Other Models

Although some countries had begun to be secularised during the Enlightenment of the latter half of the 18th century, most universities remained ecclesiastic to the extent that they were directly supervised by the respective churches, or at least strongly connected with them. But during the 19th century, public universities were transformed into secularised lay institutions everywhere. The few faculties of Catholic

theology reintroduced into France and Spain could not survive and disappeared from higher education. At the same time, universities became increasingly subjected to state administration, which managed university affairs as part of the national policies and budgets. *In the 19th century and in the 20th before the Second World War, ministries of public education (or similar functions under different organisations) were set up in most European countries to cope with the growing importance of education. These provided the means for national authorities to influence education and research. They decided on the type and composition of the whole national HES, governed access to the universities and controlled their curricula.* In my organisational structure point of view, just this development can also be considered as the birth of the macro or HES level of higher education (see 2.5.1). The consequence of this process was the professionalisation of university careers: on the European continent, the professor became a civil servant of the lay and bureaucratic state. (Gerbod 2004, 88–89; Rüegg 2004, 6–9.)

By 1939, universities had become widespread all over Europe, whilst at the beginning of the 19th century, as a relic of the medieval and early modern models, they had been concentrated mainly in Western and Southern Europe. The Napoleonic model with specialist HEIs, dominant around 1800, gradually lost ground during the 19th century. The trend favouring universities, rather than a plurality of institutional types, stemmed from the great success of Prussian universities in specialised research. The 1870s and the 1880s were a crucial period for the ‘reception of Humboldtian ideals’ and the rise of the research university (Anderson 2006, 107). Gradually, through delay and difficulties, the national German model prevailed and influenced all other national models. HESs nearly all around the world (with partial exceptions of Spanish- and Portuguese-speaking countries) were developed and reformed accordingly in the end of the 19th century and the first half of the 20th century (Sörlin & Törnqvist 2000, 75). In Europe, the reforms resulted from internal intellectual and social developments. The newer universities in Central Europe applied the national German model to their organisational structures with four to six faculties: theology, law, medicine, philosophy (or divided into humanities and natural sciences), and the newer faculties of the social sciences. Eventually, the national German model also found itself in crisis, increasingly unable to adjust to the social development of industrial society and its claims on the universities. As the model was being copied throughout Europe and beyond, it entered into crisis in Germany. Integrating modern technology into universities was difficult, the teaching bodies formed hierarchies, and the student numbers grew too fast. In Europe, the student numbers rose from around 80 000 in 1800 to more than 600 000 (800 000 including the Soviet Union) in the 1930s, while also the universities’ responsibilities expanded almost as much. This created both practical difficulties and fears of an ‘academic proletariat’. *Whilst the classical 19th century university had been adaptable to meet new demands, it later began to crack under the burden of its major tasks. The states became responsible for finances and were increasingly successful in harmonising university structures with those of other*

bodies. This meant introducing new institutes and a tendency to turn universities into giant schools. The authoritarian regimes in Italy, Germany, Spain and Russia took this to extremes, but the same development continued later in the mass university. (Ben-David 2002, 14–15, 22–23, 26–27; Remy 2002, 247; Charle 2004, 33, 57–59, 74.)

Looking at countries, the German scientific spirit had also conquered the French and Italian universities at the beginning of the 20th century, although with resistance. The Prussian model influenced all newly founded universities, as well as the reforms of older ones in the Nordic countries (Sörlin & Törnqvist 2000, 75). The German influence on academic work had grown in Lutheran theology, law and the arts, but also in chemistry and physics. For instance from 1909 to 1914, the Imperial University of Alexander (Helsinki), despite the fact that Finland had no native German-speaking population, had about half of its doctoral dissertations written in German, and as late as 1916, the majority of books used in teaching be in German. Also Oxbridge became distinctly ‘more German’, even if most of the newer British universities did not. This was due to the high level of German studies in antiquity and their criticism, which transformed biblical and classical studies, important in liberal education. Scholars returning from Germany began to introduce the spirit of science into the colleges by guiding tutors towards research. By the end of the 19th century, Oxbridge had adhered to the national German model so that the importance of research in the teaching of a modern university was accepted. The ideal of a modern research university was more authentically implemented in Oxbridge than in the German universities, because Oxbridge retained corporate and collegiate autonomy and a primary mission of non-professional education. This resulted in an improved version of the research university ideal type model (see 4.1), while the continental universities subject to state authority, first and foremost had to train doctors, lawyers and other academic professionals, and while only the most gifted students benefited from scholarly education through research undertaken with their professors. In fact, the HESs of continental Europe have never been able to combine the general mass education of undergraduates with German-style scholarly teaching, whereas this is better achieved in the best Anglo-American research universities (cf. Lucas 1994, 170–174). (Ben-David 2002, 15, 23, 75; Charle 2004, 66; Rüegg 2004, 11–13.)

According to Charle (2004, 74–75), an important aspect of the universities in the 19th century is the emergence of an international ‘invisible university’, transcending all frontiers and barriers. It rested on the mobility of professors and students, overcoming the political and institutional obstacles inherent in national university policies. For the professors, there was a scholarly interchange of conferences and international academic associations. This conformed to the German ideal of research, being based on open co-operation of anyone interested in scholarly knowledge. This period of university history, which ended with the most horrendous perversions of nationalism, can also be seen to open up new paths to

the restoration of that Europe of universities which had been the basis of their medieval origins.

4.5 The Age of ‘Transplantation’ of University Models (from about 1945 onwards)

The Second World War left behind a devastated university landscape across Europe. The only areas to escape completely were Spain, Portugal, Sweden and Switzerland. The severest damage was sustained by the universities of Eastern Europe, which were systematically destroyed by the conquerors. In Central and Western Europe, the German occupation and Allied liberation left many universities in ruins. Fifty years later, they had more than recovered: the 201 European universities in 1945 had grown by another 600 by the 1990s. Three factors must be considered in contemplating the European universities since 1945. The first is the idea of reform, an essential element in universities since their beginnings (see 2.4.2 and 4.5.1 through 4.5.5). The second is the ‘destruction of the ivory tower’: the consequences and environments of reforms since the 1980s, relating to the universities’ interaction with the public domain, in Mintzbergian terms power relationships (see 2.2.2, 4.5.6 and 4.5.7). The third is the provincialisation of European universities: the loss of former world dominance in research and teaching. Afterwards, the European university models were no longer adopted in other continents like in the preceding centuries. Instead, Europe itself became a province, though an important one, in a global university landscape (cf. the GHEN level of higher education, see 2.5.1), the contours of which are largely drawn by the United States, whose modern university models, themselves influenced by the national German and national British university models in the 19th century, have again in their independently developed forms been driving the changes also in the universities of a reunited Europe since the 1990s. (Rüegg 2011, 3–4, 26–30.)

4.5.1 Reforms of the Postmodern period: Tackling Massification of Higher Education

The drive of European universities towards mass higher education stands as one of the watersheds in their history. From the 1950s to the 1990s, HESs and within them HEIs were under severe pressure of spiralling student numbers. An overview of this development is presented in Table 4. Increasing the number of universities was not simply a response to student demand, but also one of accessibility. The physical location of universities and the upgrading of non-university HEIs became an important aspect in the planning of higher education in the 1960s and 1970s. Good examples of this include the university foundations of Trier and Kaiserslautern in the Federal Republic of Germany, Umeå in Sweden and Cosenza in Southern Italy. The clearest European example of the marriage between the university and regional development policies was Finland where, from the early 1960s onwards, university locations were determined in the light of the need to build up the regional economy. (Neave 2011, 41, 52–53.)

Country	Total number of universities existing in		New universities founded		Created from HEIs with...				Total created universities	
	1949	1984	n	%	...university status		...other HEI status		n	%
					n	%	n	%		
Austria	7	12	1	8	3	25	1	8	5	42
Belgium	4	16	2	12	8	50	2	13	12	75
Bulgaria	1	6	1	16	3	50	2	33	5	83
Czechoslovakia	7	12	0	0	3	25	2	17	5	42
Denmark	4	6	2	33	0	0	0	0	2	33
Finland	1	13	5	39	3	23	4	31	12	92
France	16	81	7	9	34	42	24	30	65	80
Germany DDR	5	10	0	0	1	10	4	40	5	50
Germany BRD	15	57	10	18	18	32	14	25	42	74
Greece	4	13	7	54	1	8	1	8	9	69
Hungary	5	9	0	0	3	33	1	11	4	44
Iceland	1	1	0	0	0	0	0	0	0	0
Ireland	2	2	0	0	0	0	0	0	0	0
Italy	24	49	9	18	13	27	2	4	24	49
Netherlands	7	14	2	14	2	14	3	21	7	50
Norway	2	4	1	25	0	0	1	25	2	50
Poland	5	13	4	31	4	31	1	8	9	69
Portugal	4	13	4	31	4	31	1	8	9	69
Romania	2	8	1	12	2	25	3	38	6	75
Soviet Union	32	65	15	23	10	15	5	8	33	46
Spain	9	33	8	24	10	30	6	18	24	72
Sweden	5	11	2	18	2	18	2	18	6	55
Switzerland	10	10	0	0	0	0	0	0	0	0
United Kingdom	27	48	9	19	10	21	2	4	21	44
Yugoslavia	5	18	6	33	5	28	2	11	13	72
(Unknown)					10					
Europe total	204	524	96		149		83		320	

Table 4. The founding and creation of new European universities in 1950–1984 (adapted from Neave 2011, 51).

Even though the *massification* of higher education affected all of Europe, the adaptation of the British universities to a HES model from elite to mass education was expensive compared with other European or American models. By the 1960s, the British university system was seen as a single, national, and essentially a public structure, even though universities themselves were ‘private’. Yet the British HES differed from continental HESs in having a hierarchy of prestige as the legacy of historical development. In most European countries universities were more or less equal in prestige, and it remained normal to attend the one nearest to the student’s home, even if those in capitals like Paris, Rome or Madrid had national attraction. Universities were open, not selective, which resulted in massive overcrowding of lecture halls and was one of the reasons for the student troubles in France, Germany and elsewhere in 1968. The British system was more personal and less wasteful, since most of those admitted eventually graduated, but student selection closed off many democratic opportunities which continental systems left open. Control of admissions thus became one of the essential attributes of autonomy in British universities, which was not the case elsewhere in Europe at the time. (Anderson 2006, 141–142.)

In order to match the many challenges set by the massification of HESs, real university reform in Europe began after 1955 in many countries simultaneously (Rüegg 2011, 13–14). According to Bonaccorsi & Daraio (2007, 425), *the universities’ organisational structures were being expanded and changed to meet the new circumstances. An important source of diversity in the organisational structures of European universities thus results from the various reform policies implemented in European countries as their HESs were created.* To what extent has this indeed been the case, is at the heart of my research problem, which the empirical data on the organisational structures of European universities should answer (see chapter 5 and 6.1). Since the 1970s, there has been a growing opposition to the prevalent continental European (in essence German) HES model, in which universities are seen as state institutions with a public function and subject to state control, towards the liberal and market-oriented British and Anglo-American HES models. In nearly all of Europe, there has also been some kind of shift, from state-controlling to state-supervising HESs. At least in federal countries, the institutional context and HES can be heterogenous even at the national level, as the Swiss case demonstrates.

4.5.2 The Birth of University Management and Conscious Design of University Organisations

The period since 1945 also witnessed the arrival of *management* in universities. A key change was the gradual and often reluctant realisation, that in order to fulfil the academic objectives of universities in the political, social and economic environment pertaining, a new kind of management was needed. In Mintzbergian terms, finally also the technostructure part started to appear, while the other four key parts, especially the support staff, became more complex in the process. In 1945, the term ‘management’

had not been a part of the vocabulary of universities, except perhaps to describe an organisational method alien to a public HEI, as opposed to a business firm. The university might be ‘governed’ or ‘administered’, but not ‘managed’. Yet the history of the universities’ internal organisational structures (at the meso level, see 2.5.1) ever since is reflected in the gradual acceptance of the applicability of management to the process of decision-making and its implementation. Broadly, ‘administration’ was the characteristic term until the early 1970s, with ‘governance’ having a phase of dominance in the later 1960s and again in the 1990s. ‘Management’ began to feature in the literature in the 1960s. More recently, also management has been criticised for being old-fashioned, rule-bound and process-driven, and that it should be in essence replaced by results-driven, managerially orientated approaches to public service provision, with a stress on efficient least-cost provision. (Hood 1998, 5; Lockwood 2011, 124.)

The idea that universities can be managed made them also subjects for reform, resulting not from the application of an older or a more respected university as a model accommodated to new and local circumstances, but just the wish to change the organisational structures of a university to serve any useful purpose. This made it possible to consciously design, reform and transplant disciplines and organisational units, or divide them into specialities, or merge existing ones in order to create solutions for practical problems emerging in the late modern and postmodern societies (see also 2.4 and its subsections). The filiation of university models had always been with universities, and the external imposition of university models had been widespread under the colonial period, and also continued with the forceful imposition of Soviet HES models in Eastern Europe, but alongside came voluntary, managed importation. As noted in 1.2, since the latter half of the 20th century, information about ideologies, public organisations and hence also the organisational models of universities, is easily and publicly available to anyone, unlike in the preceding centuries. The opportunity to benchmark and transplant best practices, university models and organisational structures of any existing HEIs – from whatever countries or HESs – by applying them to any other HEIs, is a consequence of university management, born as late as in the 1960s. To give an early example of a transplantation of a university model, the originally Oxbridge idea of founding universities on separate campuses outside city centres had spread to the 19th century American universities applying the national British model. After having been applied and evolving there for over a century, it was transplanted back to Europe as a modern, developed and ‘leading’ version of the same model, and was thus also applied to universities not in any way affiliated with either the British or American university of HES models. In Finland of the 1950s, due to the effects of massification, the growing Helsinki University of Technology (currently Aalto University) was moved outside the city centre to a new area, where this ‘American’ model was implemented by constructing Finland’s first real campus for any university. Though inherently English, the model was transplanted as American, to a university that for other respects had affiliated only with the German and Russian derived university and

HES models. Later in the 1960s and 1970s, when the state founded several provincial universities, most new institutions were placed on separate campuses outside major city centres from the start, thus applying a model alien to Finnish universities until then. Since the 1990s, the campus placement policy was again regretted in Finland, when a central urban location nationally and internationally had again proved its benefits for universities (Klinge et al. 1990, 254, 432, 631–647). (Clark 1983, 227–234; Hood 1998, 5; Knapas 1999, 12; Ben-David 2002, 11–12; Rhoades 2003, 29.)

4.5.3 Emerging National Higher Education Systems

As described in 4.4.7, national ministries of education and equivalents were introduced in most European countries in the 19th or 20th century before the Second World War, to provide the nation states with the means of controlling and shaping higher education in their area. In this process, *the organisational structures of existing universities, formed under the influences from one or more of the 19th century national university models, were again copied, reformed and adapted to newer generations of universities and other HEI:s as parts of newer, national HESs*. In the evolution of the university models, this meant that *the older national models were in a time frame of several decades* (the timing depending on the countries in question) *gradually adapted to and replaced with modern, 20th century national HES models*. The use of a HES for national integration had been a European phenomenon before, as the young people ‘formed’ in the universities had a loyalty to patriotic idealism (Anderson 2006, 114–115). But it was since the Second World War that individual universities were made parts of larger, societal HESs, organised at the national level (Clark 1983, 53–106; Teichler 2008, 356). Sörlin’s (1996, 39) analysis of the United States, the Soviet Union, Great Britain, France, Japan and Sweden of the 1960s and 1970s showed clearly that government institutions were used to mobilise science and technology for the pursuit of national rather than local, regional or international needs. Burn et al. (1971, 10) agreed in their study of HESs in France, Great Britain, Canada, Australia, (West) Germany, Sweden, Japan, the Soviet Union and India, which saw universities emerging as the vital instruments of national development since 1960s. Never had higher education in the industrial countries expanded as rapidly and universally as it did in the 1960s and 1970s (Ben-David 2002, 1–2). This reflected the nation states becoming aware of the immense impact that higher education presented to their welfare (Lampinen 2003, 24–25).

With the exception of France with the *grandes écoles* at the apex of the HES, the many special colleges and other HEIs that had evolved, struggled to obtain university privileges and certification (which they succeeded in doing in Germany and Austria) or to be assimilated into the universities (as was the case of the *polytechnics* in Great Britain and *Politecnici* in Italy). Many countries also developed in their HESs a range of second tier of HEIs that cannot award doctoral degrees, such as the *Fachhochschulen*

(formerly *Gesamthochschulen*) in Germany, *Hogescholen* in the Netherlands, *Escolas* and *Institutos Superiores* in Portugal, and ‘polytechnics’, or later ‘universities of applied sciences’ in Austria, Croatia, Finland, Poland, Romania and Switzerland (cf. Pilonen 1999, 3; Rinne 2002, 80–99; Reichert 2009, 16; Aarveaara et al. 2015, 112–113). The British former polytechnics, originally created in the first binary model of a HES from 1965 onwards to the 1970s, as alternatives to the universities, were the first HEIs to belong to this category, before they were given a university status in 1992 (Skodvin 1999, 65; Lehtikoinen 2002, 341; Crespi 2007, 307; Vaira 2009, 142). Regardless of terminology, in most countries these HEIs clearly differ from universities concerning their organisation, education and research output. They are also outside the EUA definition of universities and hence I did not include them in the empirical part or data of my research. (Commission of the European Communities 1991, 142, 254, 303, 333–334, 394–395; Skodvin 1999, 66, 67; Rüegg 2004, 4, 7; Bonaccorsi & Daraio 2007, 425.)

4.5.4 The ‘Sequel’ University Building Blocks: Departments, Institutes and Schools

Departments (alternatively *institutes* or *schools* etc., but with a similar ‘subunit’ function) as a type of organisational units or ‘building blocks’ of the organisational structures of universities, are a relatively late phenomenon in university history: I call them ‘sequel’ units, because they are mostly much younger than the nations, faculties and colleges described in 4.2.5 (Kyvik & Ødegård 1990, 28). According to Kuoppala and Martinen (1995, 221), in most European universities the faculties were often the ‘lowest’ organisational units for centuries, and they had been formed in a ‘natural’ way. Since the 1960s, a restructuring of organisational structures started to occur in the universities of most countries. As already discussed, because the national university models (notably German) began to crack under the burden of the responsibilities of universities, expanded through the massification of higher education, nation states started to adjust the universities’ organisational structures in many ways and took over the universities’ finances. While nation states in this way developed national HESs, at the same time their universities were often turning into ‘giant schools’. As a method of trying to control the consequences of massification on their institutional level, the universities set up levels of departments, institutes and schools. In Mintzbergian terms, the operating core part got wider and also taller, while the middle line part was often also extended as a result. Hence the expanding organisational structures grew particularly in the ‘lower level’ units of their hierarchies. Such disciplinary departments soon became common internal units in most European universities, particularly where the German affiliated HES models were followed. On the other hand, departments have been criticised of fostering loyalty to the discipline at the expense of the HEI, and specialisation and particularism that narrow the horizons of both students and professors. Departments can block needed curricular change, be unable to deal with larger scale student problems or faculty collective bargaining, and can demonstrate inability to detect and correct their

research and teaching quality decline. The departmentalisation often caused larger universities to become highly differentiated and to lose their common grounds and shared principles. Kerr (1995, 3–34) described this as a transition from a university to a service-oriented ‘multiversity’. (Burn et al. 1971, 209; McHenry 1977, xi, xiii, 6–8, 55–60; Charle 2004, 74; Tirronen 2010, 96–99; 2014, 65–69.)

4.5.5 Reforms within the Higher Education Systems based on the Four National Models

This subsection, as a continuation to 4.4.6, summarises from existing research, which kinds of *main reforms occurred in the national HESs in each part of Europe since 1945*, in order to parse the overall 20th century development of the European university and HES models (see 4.6). It is grouped according to the national university models that the universities of each area were originally affiliated with.

After the erosion of the Napoleonic model, the HEIs in France were still almost completely centralised under the government. The universities were a loose federation of isolated faculties, held together more by their relationship to the Ministry of National Education than by their own administrations. As late as 1968, the universities got a more autonomous position in a major HES reform, aimed at decentralising the system. However, the position of the *grandes écoles* remained and has since been independent. The French HES since is characterised by a high degree of institutional diversity with respect to various HEI types coexisting in the same system (Reichert 2009, 45, 61). According to Pelkonen et al. (2010, 46, 51–52, 98–104) the French HES has faced extensive reforms in the 2000s, with the aim of enhancing research. (Burn et al. 1971, 22, 34; Bienaymé 1978, 2, 15–16, 25–27, 78–82; Barblan 2011, 554.)

Of the other countries that had followed the national French model, later reforms were successful in Spain and the Netherlands, but unsuccessful in Italy. A new Spanish model emerged in the 1970s with a shift from an elite to a mass HES. A reform in 1983 made universities autonomous and private universities possible, while the structures of universities were also democratised. The Spanish HES since consists almost exclusively of universities which all have a similar organisational structure and scope as a consequence of the rigid state regulation. The Dutch HES has seen only gradual reforms since the 2000s, emphasising strategic choices in order to improve the quality of both research and education. The organisational units of universities under the central level are the faculties, often subdivided into sub-faculties and/or departments. In Italy, major HES reforms really never occurred. In Switzerland of the 2000s, there have been many attempts to pool resources for HEIs and clarify the diffuse system for higher education, but the reform has been slow and remains unfinished. (Daalder 1975, 196–198, 214; Bonaccorsi & Daraio 2007, 241; García-Aracil 2007, 376–377; Pelkonen et al. 2010, 52, 66, 139–154.)

After the Second World War, the German universities, devastated during Hitler's reign of terror, presented a *tabula rasa*, necessary for a fundamental reform of the state and its HES. In the eastern zone of occupation under its supervision, the Soviet Union embarked on a total reorganisation of the HES based on the Soviet model, which lasted until the collapse of the Soviet regime in 1989. Since the leading Humboldt University was left on the east side of the Berlin wall, as a counterbalance, the Free University of Berlin (*Freie Universität Berlin*) was founded in West Berlin in 1948 (Tent 1988, 1–2). The Federal Republic of (West) Germany re-established in 1949 the authority of the eleven *Länder*, whose ministries of culture were responsible for rebuilding the HES. The goal of the classical, self-governed German model of *Ordinarienuniversität* had been to provide academic education to an elite, but this became ever more difficult to uphold after the war, when the HES was expanded to serve a far greater population. The student protest movement and others wanted to reform the HEIs into surveyable organisational units following the British (and American) models of departmental structure, strengthening the administration and making it professional instead of the classic *primus inter pares* principle. A new type of HEIs were the universities created since the 1960s, intended to increase the capacity and to improve the regional distribution of higher education. Their creation was also linked with the aim of introducing a structural reform of the traditional universities. Some teachers colleges, theological seminaries and art academies became independent HEIs with university-type status in the 1970s, or were incorporated into universities. The *Fachhochschulen* (see 2.4.2 and 4.5.3) became the largest HEI sector next to the universities. According to Schimank and Lange (2009, 51–67), as the universities' traditional governance regime was strong, Germany ended up a 'latecomer' with respect to reforms of its universities in comparison with other European countries, and with respect to NPM and similar trends (see 4.5.6). Practically all German universities have been and continue to be public state institutions. (Burn et al. 1971, 176–177; Nipperdey 1975, 119–121; Peisert & Framhein 1978, 4, 7–12, 18–20; Rüegg 2011, 13.)

Structural reforms similar to those in Germany were carried out in other countries affiliated with the German HES model, particularly in the Nordic countries. The Norwegian HES in European comparison is condensed in its number of universities in relation to the population, with only seven multidisciplinary and five special universities in operation. The Norwegian HES reform came in waves: expansion and democratisation of universities in 1960–1980, quality and systemic integration in the 1990s, and efficiency, standardisation and internationalisation in the 2000s (Bleiklie 2009, 132–142). On the other hand, Denmark in 2007 saw one of the more radical, politically motivated top-down HES reforms anywhere: the structures, administration and funding of all universities, and even the ministries dealing with higher education, were drastically reformed: 27 universities and other HEIs were reformed to eight universities and three research-focussed institutions. At the core of the HES are three large universities, together comprising about two thirds of all higher education and research. Sweden of the 1960s saw an

era of rapid creation of universities, especially with the faculties of humanities and social sciences (Bauer et al. 1999, 48). Colleges were reformed to universities and medium-sized cities got *universitetsfilialer* (university branches) under the authority of the older universities. These and other HEIs were in the 1970s transformed into university colleges and later into universities (Burn et al. 1971, 198, 205, 223; Premfors & Östergren 1978, 9, 35). In a national reform of 1977, all higher education organisational units in each city were brought together to form a *högskola*, university under the Ministry of Education, with few exceptions. This changed both the purpose and the distribution of authority within the HES. Marton (2000, 67–81) sums up the Swedish development: expansion of the universities with the welfare state until the 1960s, mass education with the establishment of regional colleges in 1968–1977, decentralisation in 1978–1990, and more freedom for universities since the 1990s. Thus, the Swedish HEIs may have several faculties, be single-faculty or specialised universities, or lower *fackhögskolor*, independent colleges in applied sciences, like the German *Fachhochschulen* (Burn et al. 1971, 197–199). In the 2000s, no forced mergers of HEIs have been introduced to the Swedish HES composed of regionally comprehensive and democracy-enforcing universities. In Finland, from 1956 began a phase of a vastly expanding ‘national university institution’ HES in the founding, promotion and moving of provincial HEIs as new universities to several new cities in the 1960s and 1970s. Le Galès (2002, 272) called it ‘the most effective regional policy development activity’ against urbanism in the European context. The new universities were based on the multi-faculty research university model of the University of Helsinki, but have also been able to distance themselves from it. *Ammattikorkeakoulut*, polytechnics in the German *Fachhochschule* model, were created in the 1990s as new HEIs. All HEIs operate under the Ministry of Education and Culture, and in the 2000s, the HES was developed with several HEI mergers. A major university reform in 2010 strove to increase the universities’ administrative autonomy from the state (Aarrevaara et al. 2009). (Merikoski 1966, 9–15; Burn et al. 1971, 197; Premfors & Östergren 1978, 4; Lehtisalo & Raivola 1992, 127–129, 181–183; Malkki & Hölttä 2000, 46–49; Lampinen 2003, 32–35; Pelkonen et al. 2010, 46–47, 52, 51–52, 66, 76–85, 105–130; Klinge 2011, 816–822, 833–835; Jakonen & Tilli 2011, 9–29, 166–192; Aarrevaara 2012, 143–153.)

For centuries the British universities served only an elite, and as late as at the 1950s, they were attended by only 4% of each generation. In 2006, the percentage was approaching 50% and there were over 90 universities. The British HES experienced great changes in size, scope and structure from the 1960s onwards, and a ‘relocation’ of its HEIs towards more urban areas (Becher et al. 1977, 1; Tight 2007, 251–264). In response to the demand for more higher education nine new universities were founded from 1961 to 1967, ten colleges of advanced technology were promoted to universities and 30 new polytechnics were created since 1965. In 1977, there were 45 British universities: 34 in England, one in Wales, eight in Scotland and two in Northern Ireland; 61 other HEIs: polytechnics in specific fields;

and 192 colleges of higher education, art and music (Becher et al. 1977, 7–8). Since the system had grown, Britain was also among the first to adopt NPM style ideas in its HES (see 4.5.6), as was also done in other public services (Ferlie & Andresani 2009, 179–181). In 1992, the polytechnics were given a university status, which caused expectations of a rapid end to two-tier type HESs in Europe. Instead, several new two-tier HESs were established in the 1990s in countries like Austria, Finland and Switzerland, and the Central and East European countries opted for various models (Teichler 2009, 163; Reichert 2009, 16). In Ireland, the development was similar: Trinity College Dublin’s departments were reorganised into 20 schools in 1952, and further into six faculties in the late 1960s. By the 1990s, there was considerable expansion in subjects and numbers of staff and students at Irish universities, but the faculty structure remained. According to Pelkonen et al. (2010, 46, 51–52, 87–96, 131–138), of the countries following the British HES model, in the 2000s, the United Kingdom has not undertaken major reforms of its HES, while Ireland has been the subject of intensive reform, aiming mostly at pooling structures and resources of existing HEIs. (Burn et al. 1971, 46; Becher et al. 1977, 20; Luce 1992, 152; Anderson 2006, vii, 194; Crespi 2007, 307; Teichler 2008, 361; Vaira 2009, 142; Evans 2010b, 62.)

The British HES was binary or two-tier with sectors: the universities were the ‘private’ sector of ‘autonomous’ HEIs, although hardly tenable in view of the predominance of public finance also in their funding and their open access to the qualified public, while the ‘public’ sector consisted of polytechnics, colleges and institutes of (higher) education, mainly controlled by and mostly receiving their funds from local authorities. After the polytechnics had become universities in 1992, *college of higher education* and *university college* types of independent HEIs were gradually created parallel to them. In European comparison, the British universities of the modern period are thus anomalous institutions, whose precise status and relationship with the state is hard to define: they are not private bodies independent of state, but equally certainly not state-owned or state-controlled, as most European universities are. They are only to a limited extent state-regulated, and yet are for the most part state financed. It is also noteworthy that the traditional Oxbridge collegiate model has remained vital regardless of the many pressures and reforms of the period. Even as also Oxbridge had to adapt to the new social world of the 1960s, they successfully retained both scholarly quality and collegiate structure of organisation, which has later been copied also into other British universities, with varying degrees of success (Evans 2010b, 61–62). However, a shortcoming of the British collegiate university, from the organisational structure point of view, is the relative weakness of the institutional level (in Mintzbergian terms, the strategic apex and technostucture parts) of the university as a whole, compared with its autonomous and independent colleges, let alone compared with the leading continental universities. Such ‘internal autonomy’, or even the historically ‘separate lives’ of the colleges, which no university-level organisational structure reform ever seems to come to disturb, is well reflected in the 800-year time span of Figure 8, and also in the

speech of the Cambridge's vice chancellor, in 1968: *'One weakness in our pattern of administration is that we have had no group of people in the University charged with the duty of reflecting on the future of the University as a whole'* (Evans 2010b, 62). Such a deficiency might even be amplified further in the modern period, emphasising management and the need for environment-adaptive organisational structures. (Merikoski 1966, 28–29; Burn et al. 1971, 63–66; Becher et al. 1977, 20–24, 41, 82; Walford 1987, 15–18; Anderson 2006, 113–116, 172–173; Crespi 2007, 307; Reichert 2009, 22–28, 42–44.)

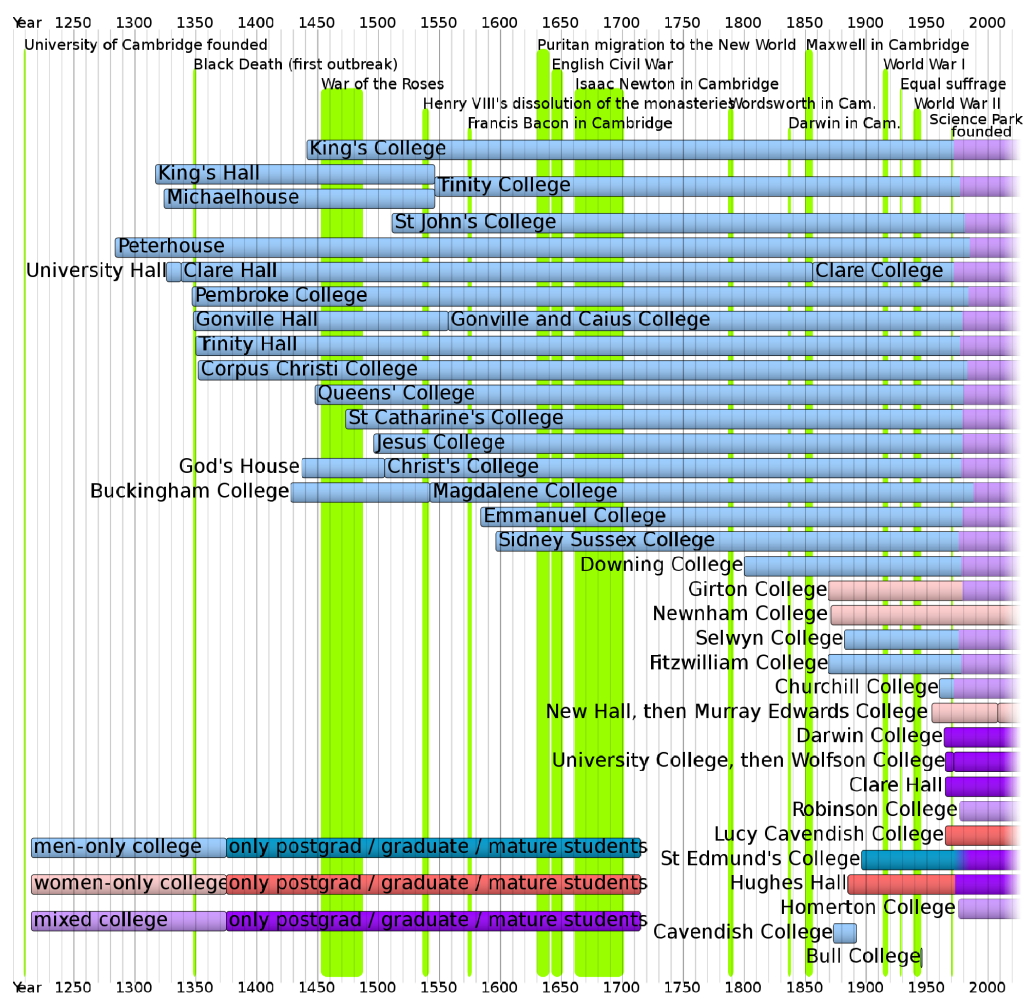


Figure 8. Timeline of the evolution of colleges in the University of Cambridge, in the order their students are presented for graduation (issued by the University of Cambridge, 2011).

After 1945, the Soviet Union embarked on a reorganisation of the universities in all Central and Eastern European states under its influence. As a case example already mentioned, the HES of East Germany went through a radical top-down reform, in which the traditional German universities' organisational structures, usually composed of a handful of faculties, was reshaped into a much higher number of

manageable *Sektionen*, sections comparable to the departments of British universities: the around 960 institutes (of the universities of the national HES) built around professional chair-holders were abolished and merged into 190 sections, and in the Humboldt University seven faculties and 169 institutes were replaced with 26 sections (Clark 1983, 188–189). Similar HESs on the Soviet model were introduced in Eastern European countries indirectly, with the help of the local communist regimes. Until the Soviet regime collapsed, there were few changes in the self-contained Soviet HES model, but its application varied in these ‘satellite states’. After the Soviet Union ended in 1991, the various revolutions led to the emancipation of East and Central Europe, also bringing academic freedom to HEIs (after a long period of central management of content and procedures by the state). Foreign governments and international associations offered assistance to post-socialist countries to establish new HEIs, to implement legislative reforms and to learn ‘western’ ways of doing things. The Eastern European HES transition has often been seen as a shift from a state dominated to a privatised, market dominated HES, but this view is too simplified, because the markets mostly did not develop problem-free after the Soviet collapse. Many of the East European HESs reforms since have been driven by the massification of higher education and the desire to (re-)establish the ‘correct’, free, democratic and internationally and historically valid organisational structures, as they were presumed to compete and conflict with the previous, artificial and fundamentally flawed communist structures. Beyond restoring some facades, there seemed to be little consensus on what those structures look like. In places where these were identified, introducing them has confronted either resistance or left the underlying processes largely intact. While policies followed the ghosts of true *universitas* or a ‘western type of HES’, daily reform decisions were dominated, by *Realpolitik*. In most post-socialist countries, the governments’ agenda has supported public HESs in restoring their legitimacy. In the 1990s, their universities declared the promotion of their respective nations’ aspirations to be ranked high on their priority list, and in many newly independent states of the former Soviet Union, major universities are officially called ‘national’. Hence national HESs have been created, implementing organisational structures found in Western European university models. For example, the post-soviet Estonian HES applied a binary system of universities and vocational HEIs as the most important feature of the system, according to the German *Fachhochschule* model. However, in Russia, developments during the 1990s demonstrated that significant difficulties exist in reforming a large HES which has not experienced autonomy before. There was a gap between reality and the way things were perceived by the many leaders of Russian HEIs. Still, in addition to the universities, in contemporary Russia there are several independent elite HEIs based on the French *grandes écoles* model (Barblan 2011, 554). Finally, at least the Bologna process has had real force to change the structures of universities in most of the former Soviet countries. (Tomusk 2000, 35–39, 53, 106, 152, 165–166, 211–212, 265–273; Bain 2003, 3–5, 218; Reichert 2009, 83; Neave 2011, 40; Rüegg 2011, 13; Jeroszenko 2012, 201–206; Zgaga et al. 2013, 13–18, 24.)

4.5.6 From Global Economic Recession Towards New Public Management in Universities

In the 1990s, HESs in Europe stopped growing, and owing to the widespread economic recession in many countries, processes were started to conform most of the state run agencies and also HEIs to a level of reduced funding and economic efficiency, based on ‘management by results’ (Uusitalo 1995, 127; Alestalo 1996, 247–248; Temmes & Kiviniemi 1997, 13–22, 38–100; Ministry of Education 1998, 7–12; Eräsaari 2002, 21–23, 207–215; Aalto 2013, 114, 132–135). This subjected European universities to new forms of governance, most notably NPM (first mentioned in 2.5.2), as well as strategic and results-oriented guidance models combined with the trend of decreasing levels of public funding (Mälkiä & Vakkuri 1998, 6–9, 20–31; Meek 2003, 8–10; Kinnunen 2005, 41–42; Paradeise et al. 2009, 89; Patomäki 2009, 29–42; Ikola-Norrbacka & Lähdesmäki 2011). Aaltonen et al. (1993, 2–14) summarised the general trend and spirit of higher education in the 1990s as ‘collect fares, cut budgets and forget the HEIs’. Häyrynen-Alestalo et al. (2000, 166–170, 204–206) described the change as a transition towards a neo-liberal HES, while Hakala et al. (2003, 192–208) and Pakkasvirta (2009) claimed that the universities evolved ‘from cradles of science towards project mills’, in other words ‘from *universitas* into a project’. Such reforms were evident in most European countries, but foremost in the United Kingdom, from the 1980s onwards (Ferlie & Andresani 2009, 180–182). The adaptation necessitated structural reforms and attempts to close some HEIs permanently in order to substantially cut costs (Tapper & Salter 1992, 170–172, 225–246; Alestalo 1995; Kanninen 1995, 69–74; Ketonen & Vanttaja 1995, 9; Wiberg 1995, 19–22; Helenius et al. 1996, 7–10; Tapper & Palfreyman 2000, 21, 41–53, 148–170). To sum up, the 1990s were a period of intense management changes and reforms of most HEIs, while the models of governance at the same time diversified (Lampinen 2003, 24–25). (Kivinen et al. 1993, 134–158, 191–259; Mustajoki 2002, 74, 83; Teichler 2008, 363–365; Jakonen & Tilli 2011, 169–174.)

To put the changes of into perspective, Hölttä (1995, 9–19, 28–37) saw the global development as a transition towards a ‘self-regulative’ university, where the nation states decrease their involvement in the activities of universities and focus only on controlling the quantity and quality of universities’ outputs through management by results. However, at the same time universities were seen as being the most essential producers of knowledge and innovations without which no society can succeed in the global age (Raivola 1994, 5; Hölttä 1995, 101–107; Aniluoto 2004a, 136). Furthermore, as globalization is progressing, the importance of universities to their native cities and the wider society has become crucial (Aniluoto 2004b, 68–70, 98). The 21st century factors affecting HESs are the internationalisation of educational and science politics and the commodification of education, which would seem to converge HESs in different countries closer to one another, even as commodification is also faced with criticism from the academic communities worldwide (Scott 1998, 100–129; Dhondt 2017, 108–110, 120). The

recent reforms of the organisational structures of European universities seem to have been driven by a mix of national reasoning and internationally spreading ideas of ‘modernity’ and transplantation options with respect to expansion and other dimensions. Internationalisation can lead to debates about desirable organisational structures of one’s own HES (and HEI). Globalization involves the free flow of ideas and also models of higher education from one nation to another (Rhoades 2003, 29). In the 21st century, when the universities of Central and Eastern Europe are again reasserting their cultural and historic independence and national identity, the question is being raised in many quarters in Western Europe as to whether the nation state is any longer an adequate framework for the university – and *a fortiori*, universities’ research – to develop any further (Neave 2011, 65). (Teichler 2003, 47–48.)

4.5.7 The Effects of European Integration to European Higher Education Systems

Despite the effects of internationalisation and globalization on universities, higher education policy has never been among the political mandates of the EU; instead, in accordance with the subsidiarity principle, it is left for the EU member states to decide for themselves (Raivola 1994, 5–10; Pystynen 1995, 3–5; Virtanen 2002, 272). This owes especially to the Newmanian ideal and the national British university model: if the political control of universities has not been seen as an appropriate task for nation states, how could it fit the supranational EU? Regardless, as a part of the integration of the EU, there have been many developments emphasising the need for understanding the common legacy, goals and cooperation of universities at the European level, especially in the 21st century (Commission of the European Communities 2003; Neave et al. 2006). Since the 1980s, influential and successful projects to promote European integration have been the student-mobility programmes (Nokkala 2014, 136–138). When European governments agreed in the 1990s to establish a system of higher education study programmes and degrees all over Europe, higher education types became a subordinate dimension of diversification. Notwithstanding this, various types of universities and HEIs continue to play a more important role in Europe than in other parts of the world. The total development can be summed up as ‘Europeanisation’ of higher education, which can be defined as encompassing a range of forms of diffusion processes of European ideas and practices (Grinberg Rabinowicz & Chinapah 2015, 194–195). (Teichler 2008, 361.)

A milestone commemoration of the origins of the university as a European institution, was the *Magna Charta Universitatum* (1988), a joint declaration of principles to define ‘the University’, by 430, mostly European universities but also from around the world, at Bologna in 1988, on the occasion of the alleged 900th anniversary of the university (Olsen 2007, 37; Barblan 2011, 557, 572). Afterwards, several alliances of European universities have been created, including the *European University Association* (EUA), the *League of European Research Universities* (LERU), the *Coimbra Group of Universities*

and the *Europaeum* association (Hermans & Nelissen 1994, 3; Rüegg 2011, 26; Nokkala 2014, 150). In the metropolitan regions of several EU countries, the local universities have together formed joint associations to address common issues and represent collective interests, and at the European level, the *Union of Capitals of the European Union* (UCUE) coordinates the co-operation and numerous partnerships between cities and universities (Karvinen 2002, 7–9, 37; Aniluoto 2004b, 92).

As the pressure and incentives for deeper cooperation also in higher education have developed inside the EU, even the harmonisation of many features of previously incommensurate national HESs has been introduced in order to promote Europe's international competitiveness. Using the Open Method of Coordination (OMC), the EU has considerably influenced the development of European universities and their operating environment with 'softer' methods (Gornitzka 2007, 155–157; Maassen & Olsen 2007, 8; Paradeise et al. 2009, 93; Nokkala 2014, 130). *Since 1998, these challenges have been tackled with the so-called Bologna process: a joint agenda between the European countries' ministries of education*, based on the declarations of Sorbonne and Bologna. This has also created an integrated *European Higher Education Area* (EHEA) of compatible national HESs to promote mobility between universities and nation states (Virtanen 2002, 125, 275; Olsen 2007, 37–39; Guédon 2009, 57; Barblan 2011, 568–572; Guri-Rosenblit 2012, 59; Grinberg Rabinowicz & Chinapah 2015, 196). The process has been met with both notable success and some critique in European countries (Ahola & Mesikämnen 2003, 55–64). Sallinen (2003, 15) points out that the universities of the former socialist and current EU countries have been very active in reforming their organisational and degree structures, in order to match the newer European criteria of higher education. And as the EU since 1972 also has a university of its own (the European University Institute in Florence), its collective aspirations in the field of higher education can be interpreted as an additional, international HES (see 5.6). Maassen and Olsen (2007, 15) and Grinberg Rabinowicz and Chinapah (2015, 196–204) point out that the European discussion of university-organisation remedies reflects considerably the world dominance of elite US universities. In order to tackle the competitive challenges of massification, commodification, internationalisation and mobility, many European governments and universities have announced that they want to emulate (and thus transplant from) the top-ranked US universities, thus making Europeanisation in practice to come to mean 'Americanisation'. Gornitzka et al. (2007, 191, 199) claim that the European level has become more important for the universities in Europe, but it has not replaced the other important levels of their governance – national in particular. However, the Bologna process and therefore Europeanisation can be seen to have changed the dominant higher education development paradigm from 'diversity' to 'convergence' (see Grinberg Rabinowicz & Chinapah 2015, 203); a claim I shall return to in 5.6. Olsen (2007, 33) concludes that while the historical development of universities in Europe has distinct characteristics, talking now about 'the European university', which means characteristics that apply to

all European universities, refers more to a normative vision instead of an achievement. This vision could of course be understood as one more university model (of an ideal type). (Commission of the European Communities 1991; 2003; Raivola 1994 5–7, 11–19; Pystynen 1995, 3–7, 28–29; Kuoppala et al. 2003, 36; Lampinen 2003, 66; Neave et al. 2006; Teichler 2008, 364, 367; Nokkala 2014, 142–144).

4.6 The Historical Filiation and Development of University Models in Europe

Looking back at the entire historical filiation and development of the European universities, several lessons can be learned. Firstly, even though the medieval basis of the universities' organisational structures and the terminology to describe them are common and shared by most universities through the ages, the organisational 'building block' units of these historical universities differ, both in their terminology and function (Durkheim 1977, 162–163). For example, a 'department' of an undergraduate liberal arts college is both structurally and functionally distinct from a 'department' in a multi-faculty research university offering doctoral and professional programmes (McHenry 1977, 35–36). Secondly, this does not mean, however, that these departments, or the HEIs they are part of, could not be empirically compared with juxtaposition, if one comprehends the path of the university and HES models their organisational structures have historically developed 'through', focuses on the specific features of those structures and categorises them meticulously. Thirdly, if applied historically (see 3.2.2), the ancestry of the Mintzbergian configuration parts is the following: the operating core, middle line and strategic apex parts can be seen to exist from the earliest medieval universities, although at the time the strategic apex might consist of only the rector of the university and also the operating core is very small at first, consisting for instance of the professors and students of a *studium*. As the universities grow and their organisational structures differentiate, the operating core gets wider, the middle line taller and the strategic apex more intricate. The support staff part emerges as soon as the universities start to have any administrative (or non-academic) staff, the timing of which varies but is often the early modern period. The technostucture part appears only with modern 'management', so after 1945. Looking at the three levels of higher education (see 2.5.1), the meso level of HEIs is there as soon as universities exist, the macro level of HESs is born with the nation states' ministries of education (see 4.5.3), and the global level (GHEN) starts to emerge only with the globalisation phase, in the 1990s (see 4.5.6). Fourthly, particularly subsection 4.5.5 demonstrates well the already noted fact that organisational units belonging to the structures of either a HEI or a HES are indeed interchangeable so that in reforms, they can every now and then 'change level' from HEI to HES or from HES to HEI (see 2.4.3). It is thus imperative to study, at least to a limited extent, organisational units at both the HEI (meso) and HES (macro) levels of higher education, in order to comprehend the change dynamics of their organisational structures.

Fifthly, regardless of the successes and failures of the historical and ideal type university models, there is not and can never be a model that would be ‘universal’ or inherently better than all the others, even though the Humboldtian ideal type model for instance was the universal aspiration for late 19th century. Hood (1998, 19, 47) reminds us that no universally agreed recipe in how to organise, is ever going to emerge, and that there will always be a continuing variety in all organisations. Sixthly, as the universities (as HEIs) have evolved, from their earliest beginnings, by adapting to the contingent factors of their environments and historical periods, this has often necessitated conflicts. The movements closely associated with universities – Renaissance, Reformation, Enlightenment and Socialism – were all based, to varying degrees, also on revolts against the universities as a part of the establishment. Still, they were all also eventually co-opted by the universities, which made them their own, by channelling their dynamism into the processes of disciplinisation. Also, the national French, national German and later American university models have, in this order, served as models for the higher education of the entire world, with the British-based models as a durable secondary option since the 19th century. The corresponding ideal type models their affiliated universities aspired to emulate with varying success, affected all HEIs within their sphere of influence. (Fuller 2000, 50, 58–61; Ben-David 2002, 5.)

I can conclude that the universities usually have some patterns in their organisational structure from all the various historical university models they have existed through, whether these were emulated from older, more prestigious paragons, created anew from a national HES model, or transplanted from some other HEI belonging to another type of HES. I will present two examples from my data. The at present 13 universities of Paris that formerly were all a part of the medieval-originating university until their division in 1968, have developed through several university models in their history. Initially each was a part of the original paragon of the medieval Parisian university model, developed in the early modern period to a pan-European version of the eminent university, were at the forefront of the Napoleonic national French model as the core of the gigantic Imperial University, later *Université de France*, and after its dissolving reform, gradually became important institutions in the developing national French HES model of the 20th century, during which they were also divided, reformed and re-merged many times over. The second example, the current University of Helsinki was founded in 1640 in Turku, by emulating in a smaller scale the organisational structures of the pan-European university model paragon of the University of Uppsala with the Parisian classic faculty and student nation structures, both of which also the new university adapted in its Finnish environment. In the 19th century, after having been moved to Helsinki, following the national German model, the university took its research-based teaching ideals from the Humboldtian Berlin of the time. As it was also a part of the national Russian model, the university was reformed as the Imperial University of Alexander in the Grand Duchy of Finland under Russian influence, and got especially its administrative structures rearranged along the Imperial lines.

After Finland gained independence in 1917, the institution was renamed the University of Helsinki and in the gradually developing national Finnish HES model, it amalgamated from the national German and national Russian models, was expanded with a corresponding departmental structure of a mostly German tradition, and gradually itself became the dominant Finnish paragon university, as all the newer universities around the country were in turn at least initially started as miniature, emulating versions of the organisational structures of the University of Helsinki (see also Palonen et al. 1992, 183).

As Clark (1983, 237) put it: *‘Innovation, reform and change are not topics that can be divorced from the study of structure and tradition. The heavy hand of history is felt in contemporary structures and beliefs, and what is now in place conditions what will be. ... We begin to know the score in the study of academic change when we understand how the various current structures stack the deck.’* Understood and analysed in this way, the historical university models are a useful analytical tool in the empirical part of my research. Based on the comparative overview of historical research on the universities in Europe (from the entire chapter 4) and my organisational ecology perspective (see 2.2.1 and 2.2.4), I will now summarise in Figure 9 the schematic historical connections and development of the European university models as a ‘family-tree’: from medieval Bolognese and Parisian ‘roots’, through the early modern pan-European ‘trunk’ as well as the competing national model ‘branches’, to the national university and HES models, as they have hitherto developed, as the outer layer of ‘leaves’. The family-tree shows the generational organic filiation of the university models, and it also illustrates, through which models the European universities have developed through, based on their age. *I must emphasise that in this tree of a schematic nature, representing the connections of historical university models as analytical tools, I am not claiming any causal development chains or that there would not be also other connections between the models.* Still, as each university model can also be operationalised as a Mintzbergian organigram interpretation, the family-tree provided me an invaluable starting point in studying and interpreting the actual universities’ organisational structures and their development in my data. This starts from 1962, when all universities of the data represent their national, 20th century university and HES models (the ‘leaves’ part). The understanding of university history thus empowers a more intelligible interpretation of the empirical data on the universities’ organisation.

The observation of the famous lecture by Charles Homer Haskins in 1923 is as true today as it was nearly a century ago: *‘Whatever the development, one can argue that the essentials of a European university organisation are still clear and unmistakable: they have been handed down in continuity, have lasted over 800 [now 900] years, unlike almost any government or other institution, besides the oldest religions’* (Haskins 1957, 24). According to Barblan (2011, 553, 572–574), the universities have been a key European institution for nine centuries, even if their character has evolved since the French

Revolution in different ways to accommodate the nationalism of the societies supporting them. Despite the movement for European integration that developed after 1945, the universities were slow to cultivate the European dimension of their activities. However, in the 21st century, the identity and activities of the national universities are slowly turning into European and global ones. A fitting end to the long history of the university *in* Europe is the emergence of universities *of* Europe: institutions expressing and defending the specificity of an integrated culture *for* Europe in the wider world.

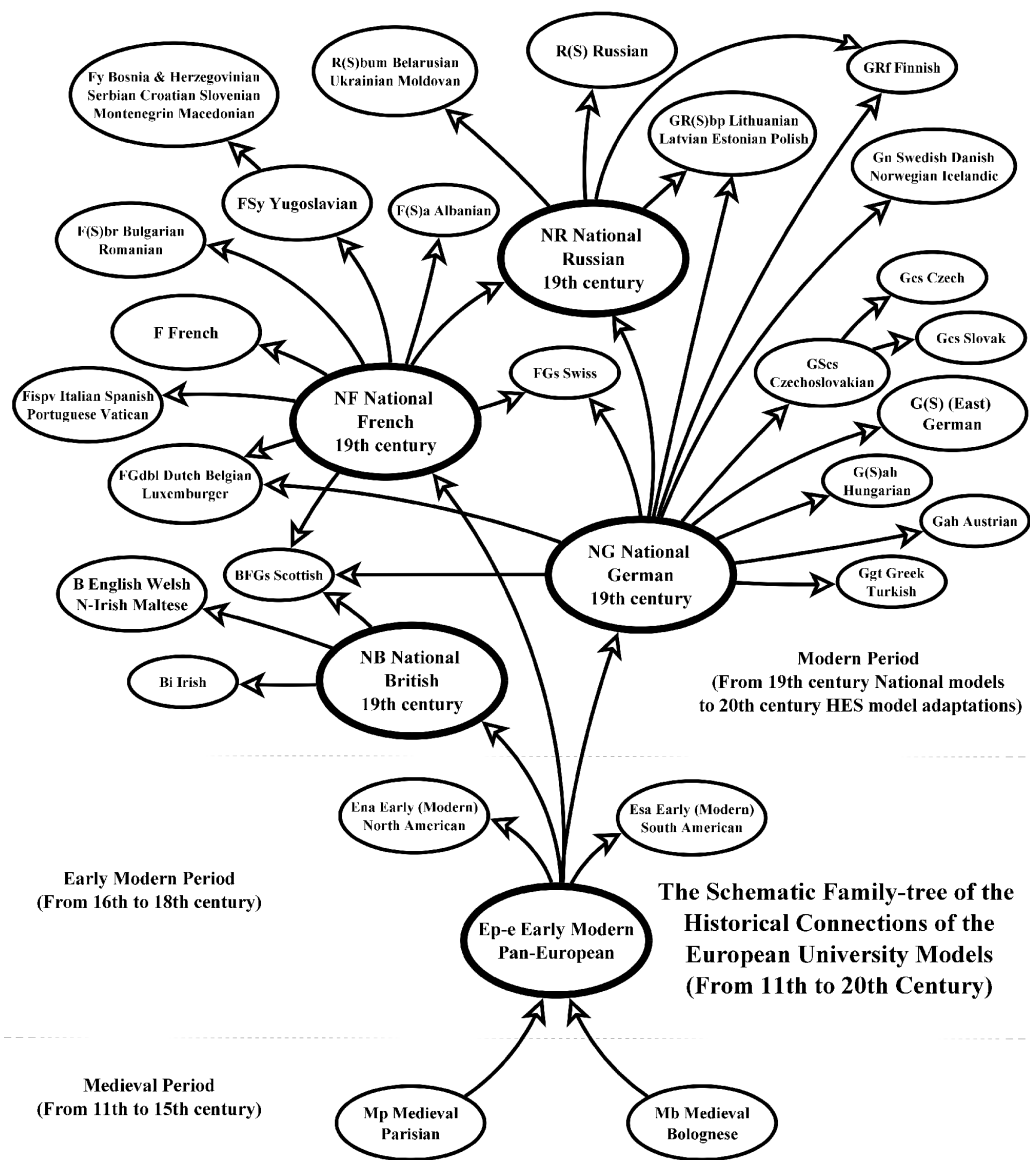


Figure 9. The Schematic Family-tree of the historical connections of the European university models (from 11th to 20th century; the legend of university model category abbreviations mentioned in the tree is found in Appendix 2).

5 A Comparative Analysis of the Primary Research Data

This chapter contains the main comparative analysis of my primary research data. In order to answer the research questions presented in 3.1.2, I shall begin with a more detailed description of the data in 5.1 and continue with findings from both individual university organisational unit types, their structural location, configurations and general attributes in 5.2. Then I will move on to the organisational structures in relation to the national HES models, the universities of the data are affiliated with, in 5.3. I will continue to findings concerning the general development, reforms and other changes of organisational structures of universities in 5.4, as well as their overall long-term configuration size, shape, dispersal and differentiation (for definitions of these, see 3.1.1) development on the universities' population level in 5.5, and finally to the convergence versus divergence developments in 5.6. The findings are also compared and discussed relative to the Mintzbergian application of the SCT and its conceptions on the structure-shaping contingency factors in particular. In this chapter 5, sections 5.2, 5.4 and 5.5 answer my first research question, sections 5.3, 5.4 and 5.5 the second research question, and section 5.6 the third research question (the research questions were presented in 3.1.2).

5.1 Description of the Research Data and the Mintzbergian Interpretations of It

As already described in further detail in 3.2, *the primary longitudinal data contain a non-random, non-probability sample of 106 heterogenous European universities (or 40.3%) out of a total population of 263 universities* matching the precise criteria (see 3.1.1) *per the year 1962*. Also the four national university model influenced HES models (French, German, British and Russian, see 4.5.3) were included in the sample selection maintaining their university population balance as a means to categorise the universities of the data to their affiliated HES model groups. Applying the population ecology approach (see 2.2.4), from the basic population of universities affiliated with each of the four HES models, a number of universities as close to 40.3% as possible were included in the sample and then chosen from corresponding countries, so that the sample would include at least one university from each country represented in the basic population, and at the same time the sample would represent the organisational variety found in the basic university population in 1962. Probability sampling was not used, because random selection would have created a sample, where several countries would have been left completely out of the sample, as in 1962, per the criteria used, most European countries had only a few, and the smaller countries often only one university, even as these then often represent the most well-established universities of their respective countries. The total and sample numbers of universities in each European country and per their affiliated HES models is compiled as Table 5.

European country (or equivalent international organisation)	Universities in 1962		Universities in 1974		Universities in 1983		Universities in 1993		Universities in 2003		Universities in 2013	
	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample
Albania	1	1	1	1	1	1	1	1	8	1	6	1
Andorra	0	0	0	0	0	0	0	0	0	0	1	0
Austria	5	3	14	3	18	3	18	3	24	3	24	3
Belarus	N/A	N/A	N/A	N/A	N/A	N/A	3	1	31	1	14	1
Belgium	5	4	15	6	17	6	8	6	16	6	14	6
Bosnia and Herzegovina	N/A	N/A	N/A	N/A	N/A	N/A	4	1	6	1	12	1
Bulgaria	1	1	3	1	3	1	3	1	24	1	32	1
Croatia	N/A	N/A	N/A	N/A	N/A	N/A	4	1	4	1	7	1
Cyprus	0	0	0	0	0	0	1	0	1	0	6	0
Czech Republic	N/A	N/A	N/A	N/A	N/A	N/A	17	2	19	2	29	2
Czechoslovakia	8	4	10	4	9	4	N/A	N/A	N/A	N/A	N/A	N/A
Denmark	3	2	6	2	7	2	7	2	8	2	13	2
Estonia	N/A	N/A	N/A	N/A	N/A	N/A	2	1	7	1	7	1
Finland	5	4	11	4	21	4	20	4	20	4	16	4
France	22	7	65	21	80	22	78	22	87	22	147	20
Germany (united)	N/A	N/A	N/A	N/A	N/A	N/A	79	7	91	7	71	7
Germany (DR)	7	3	17	3	17	3	N/A	N/A	N/A	N/A	N/A	N/A
Germany (FR)	26	4	54	4	62	4	N/A	N/A	N/A	N/A	N/A	N/A
Greece	3	2	5	2	8	2	17	2	19	2	17	2
Hungary	8	2	18	2	18	2	18	2	21	2	22	2
Iceland	1	1	1	1	2	1	3	1	6	1	3	1
Ireland	2	1	2	1	5	1	8	1	15	1	29	1
Italy	30	8	39	8	41	8	47	8	75	8	81	8
Latvia	N/A	N/A	N/A	N/A	N/A	N/A	2	1	4	1	20	1
Liechtenstein	0	0	0	0	0	0	0	0	2	0	3	0
Lithuania	N/A	N/A	N/A	N/A	N/A	N/A	3	1	14	1	14	1
Luxembourg	1	1	2	1	3	2	2	2	3	2	1	1
Macedonia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	1	7	1
Malta	1	1	1	1	1	1	1	1	1	1	1	1
Moldova	N/A	N/A	N/A	N/A	N/A	N/A	1	1	16	1	11	1
Monaco	0	0	0	0	0	0	0	0	1	0	1	0
Montenegro	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	0	2	0
Netherlands	8	4	12	4	13	4	15	4	15	4	19	4
Norway	3	2	4	2	5	2	7	2	7	2	18	2
Poland	17	4	20	4	24	4	26	4	81	4	97	4
Portugal	4	2	5	2	14	2	21	2	24	2	34	2
Romania	6	3	11	3	12	3	30	3	47	3	53	3
Russian Federation	N/A	N/A	N/A	N/A	N/A	N/A	33	5	221	5	199	5
San Marino	0	0	0	0	0	0	0	0	1	0	1	0
Serbia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	2	13	2
Slovak Republic	N/A	N/A	N/A	N/A	N/A	N/A	7	2	16	2	26	2
Slovenia	N/A	N/A	N/A	N/A	N/A	N/A	2	1	2	1	11	1
Spain	15	5	23	5	36	5	43	5	68	5	76	5

European country (or equivalent international organisation)	Universities in 1962		Universities in 1974		Universities in 1983		Universities in 1993		Universities in 2003		Universities in 2013	
	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample	Total	Sample
Sweden	6	3	9	3	10	3	12	3	15	3	17	3
Switzerland	8	3	9	3	10	3	10	3	12	3	14	3
Turkey	2	1	3	1	3	1	7	1	23	1	19	1
Ukraine	N/A	N/A	N/A	N/A	N/A	N/A	10	3	92	3	71	3
United Kingdom	26	10	47	10	47	10	88	10	91	10	154	10
USSR	25	13	38	13	40	13	N/A	N/A	N/A	N/A	N/A	N/A
Vatican	8	1	5	1	5	1	5	1	6	1	18	1
Yugoslavia	6	6	11	6	19	6	9	3	N/A	N/A	N/A	N/A
EU	0	0	0	0	1	0	1	0	1	0	1	0
IMO	0	0	0	0	0	0	2	0	2	0	2	0
Europe total	263	106	461	122	551	124	672	124	1253	124	1451	121

Table 5. European universities in the data sample compared to the total HES population of their native countries 1962–2013 (figures for Russian Federation, Turkey and USSR include only universities that also exist in geographical Europe).

The number of existing European HESs per the data years is also demonstrated in Table 5. It shows that the European nation states in the latter half of the 20th century, and hence also their respective HESs, often had more propensity for change than their native most well-established university institutions had, even as the number of newer universities (and other HEIs) grew rapidly. In 1962 and 1974, there were 30 national HESs. By 1983, also the first international HES (that of the EU) had been created, while the number of HESs otherwise stayed the same. Coming to 1993, these numbers have increased to 40 national and two international HESs. In 2003, the number of national HESs has increased to 45, and in 2013, to 46, while the number of international HESs in geographical Europe has remained at two.

The numbers of universities and their development per their affiliated HES models in comparison with the evolving total European university populations in HESs is compiled as Table 6, and a more precise listing and information on these 106 sample universities is compiled as Appendix 1. The so-called *amalgamated HES models* – that refer to those 20th century HESs models, which are simultaneously affiliated with, and adapted from, two or even three out of the four 19th century national university models – are calculated as being affiliated with the HES model which is the more or most dominant (and expressed with the first letter in the university model category abbreviations, see Appendix 2 and Figure 9 for details). These five amalgamated HES models are the Swiss (FGs), Lithuanian/Latvian/Estonian/Polish (GR(S)bp), Finnish (GRf), Dutch/Belgian/Luxemburger (FGdbl) and Scottish (BFGs) HES models.

HES model (per national university model affiliation)	French	German	British	Russian	All total
Universities in data 1962	46	38	12	10	106
European universities total 1962	115	97	29	22	263
% of total European universities in 1962	40.00	39.18	41.38	45.45	40.30
Universities in data 1974	62 (+16)	38	12	10	122 (+16)
European universities total 1974	201 (+86)	175 (+78)	50 (+21)	35 (+13)	461 (+198)
% of total European universities in 1974	30.85	21.71	24.00	28.57	26.46
Universities in data 1983	64 (+2)	38	12	10	124 (+2)
European universities total 1983	255 (+54)	207 (+32)	53 (+3)	37 (+2)	55 (+91)
% of total European universities in 1983	25.10	18.36	22.64	27.02	22.46
Universities in data 1993	64	38	12	10	124
European universities total 1993	283 (+28)	247 (+40)	98 (+45)	47 (+10)	675 (+123)
% of total European universities in 1993	22.61	15.38	12.24	21.28	18.37
Universities in data 2003	64	38	12	10	124
European universities total 2003	409 (+126)	379 (+132)	108 (+10)	360 (+313)	1256 (+581)
% of total European universities in 2003	15.65	10.03	11.11	2.78	9.87
Universities in data 2013	61 (-3)	38	12	10	121 (-3)
European universities total 2013	551 (+142)	423 (+44)	185 (+77)	295 (-65)	1454 (+198)
% of total European universities in 2013	11.07	8.98	6.49	3.39	8.32

Table 6. Universities in the data sample compared to their affiliated HES models 1962–2013 (figures in parenthesis denote change in the number of universities since the previous data year).

5.1.1 Demarcation Lines Inside and Outside the Data

The changes in the yearly number of universities belonging to the data are all accounted for by total divisions and mergers of some of those universities. Universities affiliated with the French HES model

(and the amalgamated French & German, Dutch/Belgian/Luxemburger adaptation HES model) saw drastic changes in their respective national HESs after 1968 (see 4.4.1). In the data, the medieval-originating *Université de Paris* (the University of Paris) was divided into thirteen independent universities in 1968–1970, *Université d'Aix-Marseille* (the University of Aix-Marseilles) into three universities in 1968–1973 (which were later re-merged to a unified one in 2012), and *Université de Clermont-Ferrand* (the University of Clermont-Ferrand) into two universities in 1976 (also re-merged in 2017). In Belgium, both *Université Catholique de Louvain* (the Catholic University of Louvain) and *Université Libre de Bruxelles* (the Free University of Brussels) were divided into two distinct universities each, a Dutch and a French speaking ones in 1969–1970. Also in Luxembourg, *Université Internationale de Sciences Comparées* (the International University of Comparative Sciences in Luxembourg) was reorganised into two separate universities in 1974, which were then merged as a single *Université du Luxembourg* (the University of Luxembourg) in 2003. I have kept all such university division parties included in the data for the entire period of the study in order to maintain the longitudinal review of all universities on equal basis.

Even as the HESs adapted from the French national university model are thus solely responsible for the changes in the number of universities in my data sample due to the total divisions and the total mergers described above, as Table 6 demonstrates, such increases and decreases in the number of universities also occurred respectively within HESs adapted from other national university models in the population of European universities, even if the followers of the French affiliated HES model are over-represented. Both Table 5 and Table 6 also show that the universities' rate of expansion is different within the followers of each of the HES models at different times. The French affiliated HESs seem to expand on average quite quickly most of the time, while the British affiliated HESs do not expand much between 1974 and 1983, until there is a larger increase in 1983–1993 because of the polytechnics gaining a university status in 1992 (see 4.5.5 for details). The difference can be understood that in the French affiliated HESs, a pressure for more higher education resulted in more universities, whereas in the British affiliated HESs, the same pressure was channelled to an increased number of departments within existing universities as well as new non-university-type HEIs (like the polytechnics before 1992). A similar development can be seen with the Russian affiliated HESs, which grow very slowly at first, but then in 1993–2003 have a vast increase in the number of universities, and correspondingly a large decrease in 2003–2013. Such larger increases and decreases in these numbers are hence often not the result of strong organic growth at all, but instead political decisions on reforming national HESs in ways in which many HEIs can either gain or lose their university status as groups at the same time. Also, most 'new' university-level institutions are no longer founded anew, but instead are created by promoting the status of existing lower HEIs. Still, the onward march of higher education is triumphant: regardless the of

model, in just 50 years the European population of universities has more than quintupled!

It is also important to mention that the precise criteria for ‘Europe’ and ‘University’ (see 3.1.1 for details) in fact demarcate the institutional population more than I had initially thought. By limiting the study strictly to university status institutions, all the *grandes écoles* of the French model and other similar elite HEIs of other systems are automatically cut from the data. Furthermore, it is interesting to note that as late as in 1962, by the EUA and national standards, most single-discipline HEIs in Europe did not have full university status, with the notable exception of the field of technology, which already had about 50. Out of these, 12 technical universities are included in the data, as are some other single-discipline universities: six in the field of theology and two in the field of law. Most striking is the field of economics, business and commerce, which in 1962 had just two full university status institutions in the whole of Europe! They were *Marx Károly Közgazdaságtudományi Egyetem* (the Karl Marx University of Economics) in Budapest and *Università Commerciale Luigi Bocconi* (the Bocconi University) in Milan. The latter of these two has been included in the data, as have dozens of universities that do have the field of economics within their units. Several even merged with other universities or HEIs at some point, like *Teknillinen korkeakoulu* (the Helsinki University of Technology (Espoo)) merged with both *Helsingin kauppakorkeakoulu* (the Helsinki School of Economics and Business Administration) and *Taideteollinen korkeakoulu* (the Helsinki University of Art and Design) to form a new, even more multidisciplinary *Aalto-yliopisto* (Aalto University) in 2010 (see Li 2011, 227–237).

5.1.2 The Mintzbergian Organigram Interpretation Method and the Notation Method

As elaborated in 2.3 and 3.1, all known universities have hierarchical formal organisational structures composed of various ‘units’. Every unit in the data belongs to a Mintzbergian configuration in that it 1. is directly involved in the education and/or research tasks of its parent university, and 2. as such, belongs to the professional organisation formed by the operating core, middle line and strategic apex parts of the university organisation. As already elaborated in 3.2.2, in contrast, *the administrative and service units* of the universities do not fulfill these conditions, since they only support the main tasks of the university (see also Pilbeam 2009, 344), and belong to the technostucture or support staff parts of the university organisation and as such *are not included in the data*. For each unit in the data, the following qualities are known: 1. category, what type of unit it is; 2. location, to which level and to where it belongs in the organisational configuration; 3. discipline, to which field of science it is affiliated with; and 4. whether it has an extra specialisation attribute (coming directly from the data, applies to only a small minority of units). These attributes augment and demarcate the character of some of the units further. Henceforth in the text and in the examples presented, in addition to their full category names, I will refer to the 35

unit categories and the 20 kinds of specialisation attributes also with their abbreviations marked in parentheses. All of these category and attribute abbreviations with their definitions are listed alphabetically in Appendix 3.

From the aforementioned attributes of the data follows that all *organisational structures described in the data can be operationalised and drawn as Mintzbergian organigram interpretations, which describe in detail the configuration of units and levels for each university*. The data then contains the operationalisations of the professional organisations of the 106 European universities (per the year 1962, and all the additional universities they have since become due to divisions and mergers) six times each, with about ten-year intervals from 1962 to 2013. This makes a total of 721 such operationalisations. This is the pivotal vantage of the data: *the organisational structures of a large number of universities at the unit level are operationalised in a compact and commensurate, comparable format and including even the time dimension for each university*. To achieve the same using conventional organisation charts as data would have meant a next to impossible data collection task with considerable commensurability issues. Each *Mintzbergian organigram interpretation can also be condensed further to a notation format which presents basically the same organisational structure information of units and levels of the universities in an extremely compact format, while still enabling their structural comparison in a meaningful and efficient way*. The descriptions of the precise drawing method of the Mintzbergian organigram interpretations as well as the notation method, both with examples, are presented in Appendix 4. Also four examples of universities from the data are presented in the notation form to demonstrate the diversity in the configurations of organisational structures: these exemplify universities of various sizes and shapes as well as ones affiliated with each of the four HES models.

It must be emphasised that *my empirical comparative analysis and its results could not have been achieved without both the Mintzbergian organigram interpretation method and especially the notation method, which was carried out for each of the aforementioned 721 professional organisation operationalisations of all the universities and for all years of the data, and then applied in the analysis. It is just the notation method which altogether made it possible to observe the salient features of the organisational structures of universities and their long-term temporal development and reforms*. This is because a majority of *the more complex and most interesting cases of change of the universities' organisational structures would have been next to impossible to perceive and to demonstrate, if the quite complex configurations were not efficiently condensed to their core essence operationalisations*, which can more easily be compared with commensurate juxtaposition. In this chapter 5, whenever the analysis required a notation case to demonstrate something in the data, this has been explained in the text and referenced to the corresponding notation, which are all found in Appendix 4.

5.2 General Features of Universities' Organisation Units and Findings on Their Categories

The research data's 721 Mintzbergian interpretations of the professional organisations of universities cover a total of 39 539 units, which depending on each university in question, are set at either one, two, three or even four levels of organisation, depicting the middle line part of the professional organisation. These levels from the whole university (strategic apex level) to its lowest subunits (the bottom of the operational core) are henceforth called, from top to bottom, as the U (for the 'University' level), U-1 (the level below it, consisting of the main organisational units, referred to as the 'main structure' level, see below), U-2 (the level of subunits below the main structure level) of and U-3 levels (the additional sub-level of even more subunits, which is found from only a small minority of the most complex and differentiated universities, that have four levels of organisation in their hierarchy). For more details of these levels, see Appendix 4. From now on, I will present many of the universities' unit categories as figures containing their frequency distributions as a function of time. According to Alkula et al. (1994, 161, 191–192), this is the most prudent, simple and efficient way to describe and present the essential findings of an analysis based in longitudinal data. The frequency distribution and temporal development among all of the units in the data per the organisational U-1, U-2 and U-3 levels, as well as among the 25 most common unit category types, is presented in Figures 10 and 11.

Figure 10 demonstrates the same overall 'fast expansion of higher education' phenomenon as did Table 6: if the number of universities in Europe had over quintupled in just five decades, also the number of academic units in a roughly stable sample of universities had tripled during the same period, from a total of 3 660 in 1962 to 10 987 in 2013. This fact alone shows evidence of vastly increasing differentiation, if not necessarily diversification as such, within the organisations of universities in the long run. When observing the units' level frequencies, we can also see that the number of units at level U-1 is more stable while the number of units at level U-2 is constantly growing except in 1983–1993, and that the closer we come to present day, the faster that number grows. As well as the number of units at level U-3, it seems to accelerate in growth just in 2003–2013, which would seem to show increasing diversity and growing organisational complexity inside the universities at just the 21st century.

At this point it is necessary to critically evaluate more precisely the meaning of the existence of units at the U-1, U-2 and U-3 level. In all but a few individual universities, the organisational structure is clearly defined in that throughout the organisation, the number of organisational levels is the same and the parallel units located at the same sub-level form a consistent set. For example, if the prevalent type and

collective structure of units at U-1 level (hereinafter referred as the *main structure* of a university) consists of faculties (F) and the structure at the U-2 level below it consists of departments (D), this means that these structures are consistent throughout the entire organisation and at least most faculties have departments under them. However, it would be naive to assume that all universities as the old, complex and environment-adapting organisations they are would be so consistently and centrally organised. There are indeed examples in the data of universities, the organisation of which is inconsistent in this respect. Many HESs allow a freedom for HEIs to organise their internal organisational structures as they see fit, and this freedom can sometimes be carried further down inside the university at least to its level U-1 units. For instance the *İstanbul Üniversitesi* (the University of Istanbul) in 2013 had twenty faculties (20F), out of which seven had no subunits whatsoever under them, nine had one department (D) category under them, and four had two department categories under them: *bölümü* as the higher, section- or division-type departments and *anabilim dali* as their sub-departments. In addition, some faculties (including dentistry) that do not have departments under them, are still unofficially organised into sections, which however are not formal units of organisation, and no one seems to mind. This means that the university, for some of its faculties, had only two organisation levels (U and U-1), for others had three levels (U, U-1 and U-2) and still for others had four levels (U, U-1, U-2 and U-3). The university as a whole in my data is then calculated as having four organisational levels. Another illustrating example of an inconsistent organisational level structure is *Eötvös Loránd Tudományegyetem* (the ‘Eötvös Lóránd’ University (Budapest)), which between 2003 and 2013 underwent a reform reducing its organisational levels from four to three, which however in one faculty was not implemented. Afterwards, seven faculties (7F) out of eight at U-1 level had just one level of subunits: departments (D) for four faculties (4F) and institutes (I) for three faculties (3F) at the U-2 level. But the eighth faculty (F) of social sciences had six institutions (6I) below it at level U-2 and fourteen departments (14D) below them at the U-3 level. Still, it must be judged that overall the university has three organisational levels.

These examples illustrate that the number of organisational levels cannot always be mechanically calculated based on just the existence of even a single unit in the lower levels if the university for the most part does not have them. As a consequence, I have calculated the total number of organisational levels of a university by observing whether at least a significant qualified minority of the units at its second-lowest level (usually U-2, but sometimes also U-1) also has subunits at the lowest level (usually U-3, but sometimes also U-2). In the extremely rare couple of cases when the answer to this question is negative, I have hence calculated the extra units at the ‘non-existing’ lowest level instead as being parallel units to their ‘host’ units at one level above.

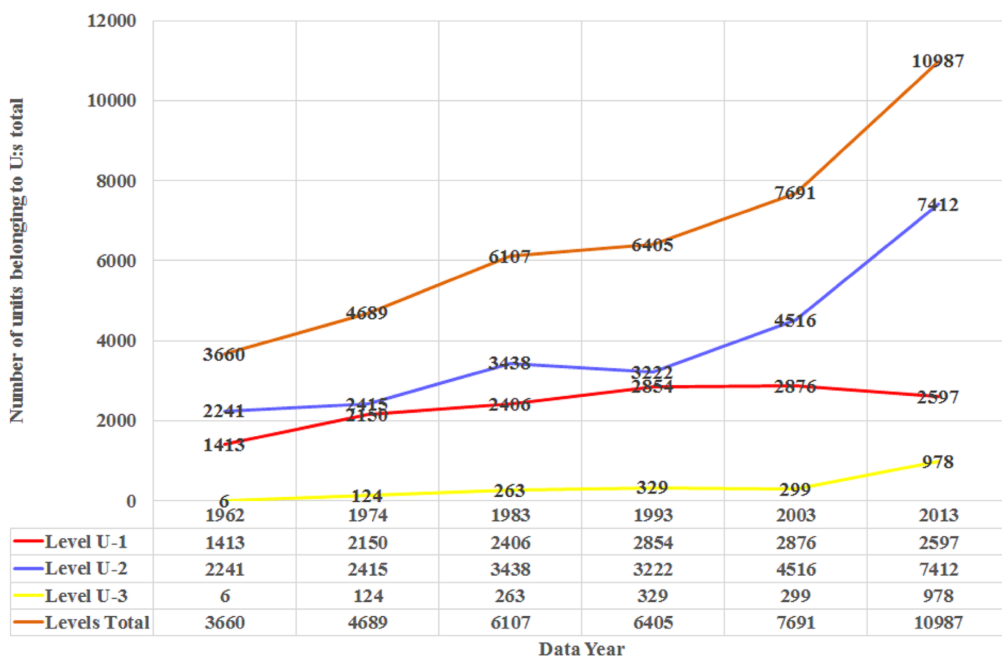


Figure 10. The total number of university units in the data and their organisational level (U-1, U-2 and U-3) location.

As size is still a fundamental contingent factor for the universities to develop their organisational structures, the organic growth of universities' organisation and their 'departmentalisation' (see 5.2.3 for reference) often go hand in hand in just that the main structure of a university at U-1 level starts to 'grow' subunits under it at U-2 level. Even as this often happens 'at once' when such units are created in a reform or through the formal recognition of long-existing unofficial substructures, it is even more usual that as the main structure units slowly and organically grow, they gradually start to create their own substructures to organise themselves better. Then a development started by just a few of the main structure U-1 level units slowly spreads and is adopted to the entire structure. To present an example from the data, *Alexandru Ioan Cuza University of Iași* (the Alexandru Ioan Cuza University of Iași) throughout the study period consists of two organisational levels only, until between 2003 and 2013 out of the fifteen faculties (15F) of its U-1 level main structure, four (4F) have organically produced subunits, so that three faculties (3F) have under them two departments (2D) each, while one faculty (F) has three (3D). Still, eleven of the faculties (11F) of the main structure remain without subunits in 2013, while in 2017 (being outside the study period of the research), a greater number of the faculties have grown more subdepartments and the departmentalisation has thus progressed.

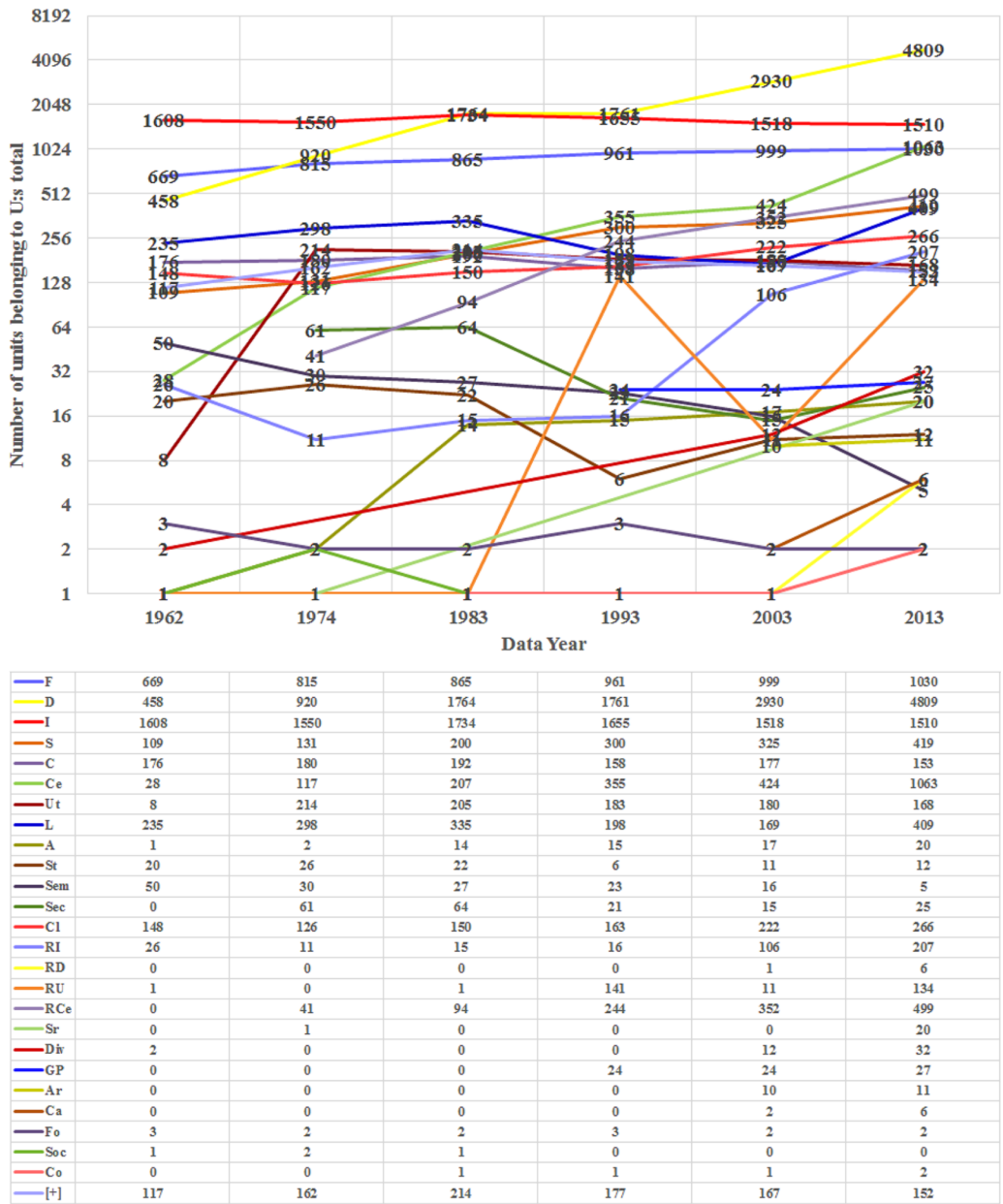


Figure 11. The total number of university units in the data per their unit types (shown in logarithmic scale for improved readability; the legend of unit category abbreviations is found in Appendix 3).

However, in the data there are also examples of the reverse, when the number of units and organisational levels is intentionally confined or even brought down in a reform. For instance, *Technische Hochschule München* (the Technical University of Munich) in 1962 has just five faculties (5F) as its main structure of U-1 level and below them a total of 85 institutes (I), seminars (Sem) and laboratories (L) at U-2 level.

By 1974, these have organically grown to six faculties (6F) and a total of 90 subunits, but by 1983, these have been heavily reorganised, and the main faculty (F)-structure replaced with departments (D) so that the entire professional organisation is condensed at the U-1 level and in 1983 consists of eleven departments (11D) as the main structure and of just one institute (I) and one centre (Ce) only. The following sections of this chapter will present a variety of additional examples of both organic growth of units to various levels, as well as intentional reforms and mergers to limit this growth.

Figure 11 demonstrates that even as there are no significant differences in the prevalence of most unit categories, *three categories are still clearly above all others in prevalence: faculties (F), departments (D) and institutes (I)*. *The number of faculties has grown steadily but also moderately over the decades, which shows that faculties have been able to resist change and maintain their traditional position as the predominant and stable main structure of most universities since the medieval period (see 4.2.5), and that as contingent structure-developing factors of their environment, the growth and massification pressures of modern times since the Second World War inside universities have been channelled more towards the ‘sequel’ or ‘lower’ units, departments and institutes (see 4.5.4).* However, even as institutes historically represent the more traditional and departments the more modern alternative to be used as the discipline-based ‘lower’ units under the faculties, I find it surprising that the number of institutes has stayed quite stable through the entire study period, even as the constant growth and supreme number of the departments at the same time could be expected. I will return to this issue in more detail in 5.2.3. One more observation can be made, and that is the strong increase in the number of centres (Ce) in 2003–2013, which probably mirrors the growth of departments on the side of research-oriented units.

5.2.1 Findings on the Names and Statuses of Units and Their Universities

Even as the category type of each unit is almost always clearly defined in the data, there are three basic ways to name and distinguish them among organisational units belonging to the same unit category. To begin with, *97.5% of units of the professional organisation of universities have been named according to their discipline or field of science, education or research*, so it can really be regarded as the universal norm and both the other two ways clearly as exceptions. Examples include *Faculty of Social Sciences* at the University of Sheffield, *Department of Veterinary Medicine* in *Justus-Liebig-Universität Gießen* (the Justus Liebig University of Giessen), *Space Research and Technology Centre* at *Sofiiski Universitet "Kliment Ohridski"* (the University of Sofia) and they are found with all existing 35 unit category types.

Secondly, *2.4% of units have been named with a proper noun affiliated with a famous person, geographical place, institution etc.* Sometimes the proper noun is still also connected with the discipline,

for example at *Ruđer Bošković Institute of Physics in Sveučilište u Zagrebu* (the University of Zagreb), but such rare instances have been calculated in the first category. Naming units with proper nouns is by far most recurring with colleges (C) (about 80% of all instances) and especially at universities affiliated with the British HES model, but also in some affiliated with the French HES model, particularly in Spain. Examples showing the large variety in the data include *Churchill College* at the University of Cambridge, *Stranmills University College* at the Queen's University Belfast, *Church of Ireland Training College* at the University of Dublin, Trinity College, and *Colegio Mayor Fonseca* at *Universidad de Santiago de Compostela* (the University of Santiago de Compostela). It is notable that *not even one faculty (F) or department (D) in the data has been named with a proper noun only*, and other unit categories with intermittent proper noun names include just institutions (I), schools (S), research units (RU), laboratories (L) and foundations (Fo), with examples like *Paul Scherrer Institut* at *Eidgenössische Technische Hochschule Zürich* (the Swiss Federal Institute of Technology (Zürich)), *Thule-instituutti* at *Oulun yliopisto* (the University of Oulu), *Polonia Instytut* at *Uniwersytet Jagielloński w Krakowie* (the Jagiellonian University Cracow), *Ecole supérieure Montsouris* at *Université Paris-Val-de-Marne (Paris 12)* (the Paris East Créteil Val de Marne University (Paris XII)), *Stațiunea de Cercetare și Practică Studentească „Ion Gugiuman”* at *Alexandru Ioan Cuza University of Iași* (the Alexandru Ioan Cuza University of Iași) and *Hitachi Dublin Laboratory* at the University of Dublin, Trinity College. Also, campus (Ca), when it seldom is an actual organisation unit of a university, often bears just the name of its geographical location, as in *Newcastle upon Tyne Campus* at the University of Durham. Regardless of the particulars, units named in this way can operate in either a single or several disciplines – more than one is most often the case with colleges – although these disciplines are not revealed in the name. However, when named after a famous person, that person most often somehow also represents the same discipline in which that particular unit operates in.

Thirdly, *units can be named according to the educational structure, program or function they serve, but this way makes up of only 0.1% of units*. Examples of the third way include *School of Advanced Study* at the University of London, *Research Department* at *Universitatea de Stat din Moldova (Chișinău)* (the Moldova State University (Chișinău)), *Undergraduate School (1. cycle) / Graduate School (2. cycle) / Postgraduate School (3. cycle)* at *Università commerciale 'Luigi Bocconi' (Milano)* (the Bocconi University (Milan)), where the 'cycles' of the last example refer to the degree cycles (Bachelor/Master/Doctor) of the European Higher Education Area. Linking these cycles to unit names is a phenomenon found only in universities affiliated with the French HES model.

There is a single instance when an institute since 1993 was named after the pope John Paul II: that is *Instytut Jana Pawła II* at *Katolicki Uniwersytet Lubelski* (the Catholic University of Lublin), a title

which is since 2005 expanded to cover the entire university to become *Katolicki Uniwersytet Lubelski Jana Pawła II* (the John Paul II Catholic University of Lublin). Of course, there are many instances when the whole university has been named from its founding with a proper noun, then almost always a person, often the founder of the university, a monarch or other ruler of the nation where the university is located, a famous scientist or writer, or the pope (see also Aniluoto 2017, 98). There are plenty of cases of this in the data, and regardless of the HES model affiliation. Such nominations have on the average also stood the test of time well, with the exception in the Soviet Russian and Soviet-influenced HES models. In the British HES model, the only example in the data is the Queens University Belfast in Northern Ireland. In the French HES model, examples showing the large variety in the data include *Universitatea 'Alexandru Ioan Cuza' din Iași* (the 'Alexandru Ioan Cuza' University of Iași) after the Prince of Moldavia and Wallachia, *Institutul politehnic 'Traian Vuia' Timișoara* (the Technical Institute of Timișoara 'Traian Vuia') after an inventor and aviation pioneer, *Università commerciale 'Luigi Bocconi'* (the Bocconi University (Milan)) after a martyr patriot and *Univerzitet 'Sv. Kiril i Metodij' vo Skopje* (the Sts. Cyril and Methodius University (Skopje)) after the Saints Cyril and Methodius. In the German HES model, variety examples include *Univerzita Karlova v Praze* (the Charles University in Prague) after the Holy Roman Emperor King Charles IV, *Justus-Liebig-Universität Gießen* (the Justus Liebig University of Giessen) after the founder of organic chemistry Justus von Liebig, and a host of humanist thinkers, who gave their names to universities such as *Humboldt-Universität zu Berlin* (the Humboldt University of Berlin), *Martin-Luther-Universität Halle-Wittenberg* (the Martin Luther University of Halle-Wittenberg) and *Ernst-Moritz-Arndt-Universität Greifswald* (the Ernst Moritz Arndt University of Greifswald). In the amalgamated HES models, the data includes just two examples: the University of St Andrews in Scotland, named after Saint Andrew the Apostle, and *Uniwersytet Wrocławski im. Bolesława Bieruta* (the University of Wrocław) in Poland, after a Communist Polish President.

In Soviet Russian and other Soviet-influenced university models from the 1950s onwards, as a rule nearly all universities were at some point named after important figureheads, mostly political but also scientific. For example, during the Albanian Communist regime the Tirana State University was renamed *Universiteti i Tiranës "Enver Hoxha"* (the Enver Hoxha University of Tirana) in 1985 after the Albanian dictator who had died that same year, or *Univerza "Edvarda Kardelja" v Ljubljani* (the 'Edvard Kardelj' University of Ljubljana) after a journalist and communist political leader. Another peculiarity was to award Soviet orders of merit to the universities and add those orders as a part of the official names of the universities, which then became preposterously complex. Examples from the data include *Kišinevskij Ordena Trudovogo Krasnogo Znameni Gosudarstvennyj Universitet im. V. I. Lenina* (the Kishinev State University of the Order of the Red Banner of Labour named after V. I. Lenin) and *Moskovskij Ordena Lenina i Ordena Trudovogo Krasnogo Znameni i Ordena Oktjabr'skoi revoljucia Gosudarstvennyj*

Universitet im. M. V. Lomonosova (the M.V. Lomonosov Moscow State University of the Order of Lenin, the Order of the October Revolution and the Order of the Red Banner of Labour). After the collapse of the Soviet regime took place and a new societal order rose to power, the orders were consistently dropped from the names of universities and also almost all personal nominations were revoked. The only ones to have been saved were those named after scientists or cultural figures, for instance *L'vivskij Nats'ional'nij Universitet im. Ivana Franka* (the ‘Ivan Franko’ National University, Lviv), which is still named after this Ukrainian poet and writer.

Mostly it is perfectly clear to which unit category a unit belongs to, but in a very few cases, there seems to be a different shade of meaning between a unit’s name and its status. I will present two examples. Firstly, at *Universidade de Lisboa* (the University of Lisbon) in 2013, a status category of some units is explicitly listed to differ from their name category: ‘*The University of Lisbon comprises 18 schools that have the designation of faculty or institute and are organic units of teaching and research with [their] own governing bodies.*’ In this case, though their status category is eighteen schools (18S), these units are listed as eleven faculties (11F) and seven institutes (7I) in the source data. Secondly, at *Kiivs'kij Natsional'nij Universitet imeni Tarasa Ševčenko* (the National Taras Shevchenko University of Kyiv) at U-1 level, the ‘seven institutes of the university’ are listed as one academy (1A), two centres (2Ce), one school (1S), two institutes (2I) and one department (1D). Also, for several other universities, an isolated Law School or Medical School (both S) has been included in the university’s list of faculties, otherwise consisting of faculties (F) only. In all such cases, it seems that for practical purposes for the university it is prudent to refer to a larger group of units belonging to a shared status group with a unified category, even as that category *de facto* contains a group of units belonging to different name categories, regardless of whether some of them are actually the same as the status category (as in the second example) or not (as in the first example and in schools listed with faculties). Throughout my analysis, in the rare cases where there has been a difference between some units’ status category and their actual name category, I have classified all such units into their name categories whenever possible.

There is a unique curious case of *Politechnika Gdańska* (the Technical University of Gdańsk) where during the period between 1974 and 1993 it seems that a units type category depends on its size: all the units at the U-1 level are either faculties (F) or institutes (I), and the category of each changes depending on the number of academic staff each of those units has. Those with an academic staff of over 100 people are called faculties, while those with less are institutes. This would not be an unprecedented way of categorising units to organisational categories per their size as such, but the remarkable thing is that these units were moved back and forth between these categories several times based on the development of their academic staff number! Out of U-1 level of 1974 with five faculties (5F) and six institutes (6I),

three units change their category once and another three twice back and forth before 1993, and always according to the number of academic staff.

5.2.2 The Faculties as the Predominant and Stable Main Structure of Universities

Faculties (F, for ancestry see 4.2.5) in the data represent 143 approximate disciplines or their combinations. This is a large number, but it still seems quite moderate in comparison with the respective around 500 disciplines of both departments (D) and institutes (I). The likely reason is that because of filiation as the original way of universities' procreation (see 2.4.1 for details), the long common history of the European universities has produced a lot of 'copied' organisational patterns and structures of the same type, which is visible best in just the U-1 level and its predominant type of units, faculties. In the 143 disciplines and their combinations, there is no emphasis of scientific fields among them, but *the medieval paragons and especially the Paris-originated 'classical model' of the four faculties of arts, theology, law and medicine* (see 4.2.4. and 4.2.5 for details) *is still clearly visible in most European faculty-based universities*. This means that the fields of law, medicine and theology are mostly quite independent organisation-wise, and when their organisations grow, they grow within themselves (for instance a medical faculty is divided into further units of dentistry, pharmacy, veterinary medicine etc. instead of mixing with non-medical disciplines). Also, the faculty of arts – often known also as faculty of philosophy or faculty of letters – normally goes through an organic growth and division phase when first the human sciences units are separated from the natural sciences units – often as early as in the 19th century – and then again both of these are divided further and further. An example of the faculties at the U-1 level in *Oulun Yliopisto* (the University of Oulu) demonstrates this well:

1962:		1974:		1983:
(F) Philosophy	>>>	(F) Humanities	>>>	(F) Humanities with (I)s at U-2 level
		(F) Science		(F) Science with (I)s and (L)s at U-2 level

However, the precise way a faculty structure divides and multiplies itself is unique for each university, and at the same time entirely new disciplines outside the classical model (like technology or social sciences) and other category units often appear alongside and within the faculty structures. Then again, there are also universities which have been developed further just by continually dividing faculties, although this is not usual: for instance *Univerzitet u Beogradu* (the University of Belgrade) in 1962 had as many as 25 faculties (25F) at its U-1 level, but at the same time nothing else.

The faculties' (F) frequency distribution and their temporal development in the data per their

organisational level location and per their HES model affiliation are presented in Figures 12 and 13. Figure 12 obviously demonstrates that an overwhelming proportion of faculties has always been located at the universities level U-1, as might be expected from their status as fundamental and predominant main structure of most universities. The data do not contain a single instance of a faculty at level U-3 and the proportion of faculties at level U-2 is also marginal in the greater whole. Another observation is that from 2003–2013 there is a slight proportional movement from the U-1 to U-2 level, which indicates the emergence of new types of ‘levels above’ units at the U-1 level, under which the existing faculties have then been subjected to. This clearly visible phenomenon in the data is demonstrated with *Katholieke Universiteit Leuven* (the Catholic University of Louvain (Dutch)), where sometime between 2003 and 2013, along with other reforms, groups (GP) as new units were introduced at U-1-level in order to regroup the university’s fields of science into three main groups. Hence also the number of organisational levels grew by one and the faculties (F)-structure in its entirety was shifted ‘down’ one level to the U-2 level. This is presented as Notation case 1 of Appendix 4.

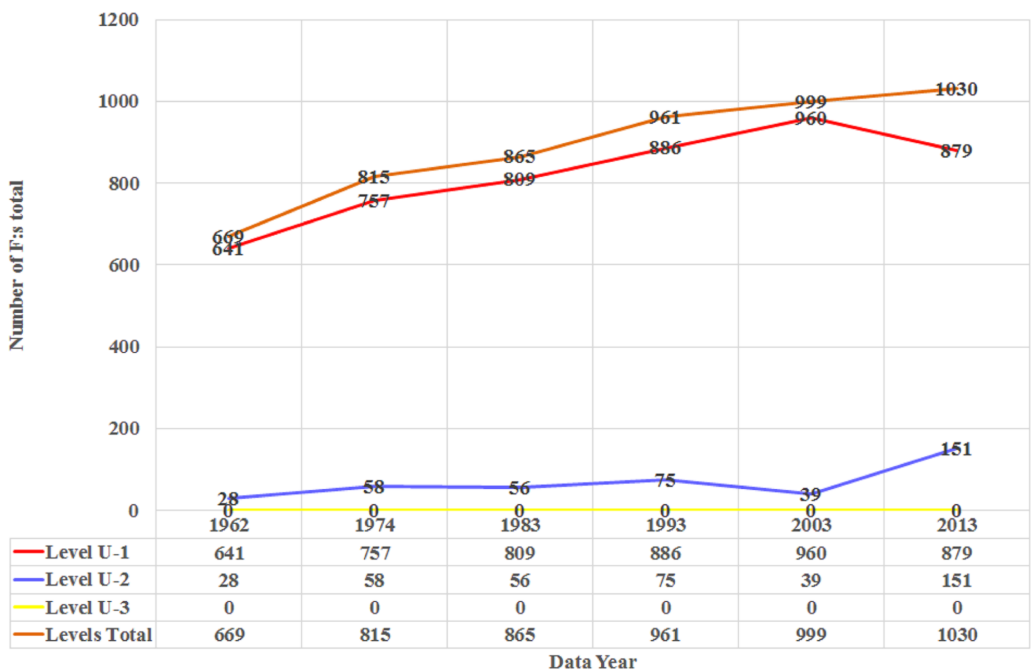


Figure 12. Faculties (F) in the data per their organisational level (U-1, U-2 and U-3) location.

Although that example is affiliated with the French HES model, inserting new ‘regrouping’ units above the faculty structure (or other U-1 level main structure) as a phenomenon is also strong in the British HES model starting with the University of Oxford, which introduced divisions (Div) as a similar new

U-1 level unit type between 1993 and 2003 and has since induced others to follow. Many such reforms have entirely replaced faculties with other unit types in many British HES model affiliated universities. This trend is also clearly visible in Figure 13, wherein which the only larger deviation from a unified trend – constantly but quite modestly growing number of faculties – seems to be the declining number of faculties in the British HES model since 1993 and slightly also in the French HES model since 2003. Other than that, it seems that the faculty structures have successfully stood the test of time and defended their position as the predominant and most stable basic unit structure of most European universities.

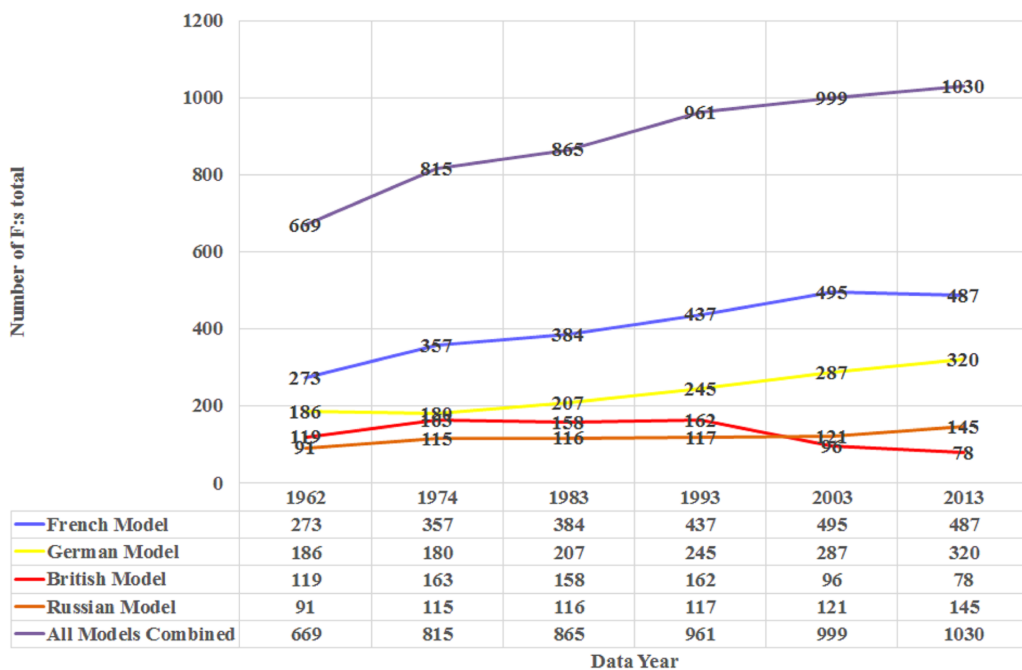


Figure 13. Faculties (F) in the data per their HES model affiliation.

Another important observation concerning faculties and the British HES model is that in universities affiliated with it, both the term ‘faculty’ and faculty (F) as an actual organisation unit category can have different meaning than what they have in universities affiliated with other HES models. As a term faculty is often more loose than its continental counterparts: first and foremost a way to generally refer to all academic or teaching staff, as is the usage also in the United States. Also ‘professor’ – in most university models the title reserved only for the most senior level teachers – can in the British and American contexts also be used as a loose general term for any level of university teacher. As an organisation unit category, especially in England, when a university at its U-1 level exhibits parallel college (C) and faculty (F) structures simultaneously, colleges make up the basic organisation with varying disciplines taught in each of them, while faculties have a lighter organisation as units and instead they are used mainly to

organise and unify the teaching staff – here I should indeed use the term ‘faculty’ – in another way also per their disciplines, for the needs of granting degrees etc. This is originally an Oxbridge tradition that has spread through the British HES model. However, it does not mean that there would not also be universities affiliated with the British HES model that have a faculty (F) structure as strong organisational units: this is the case for instance with the University of Sheffield that does not have a college (C) structure at all.

There are also several faculties which are unusual in many ways. Firstly, considering their nature as the fundamental discipline-dividing organisation units, some faculties seem to operate in a confined field of science that would normally be more fit for an institute or a department. Examples include the faculty of brewing at *Technische Hochschule München* (the Technical University of Munich) in 1962, the faculty of hygiene at *Universita Karlova* (the Charles University (Prague)) from 1962 to 1983, and the faculty of printing technology at *Sveučilište u Zagrebu* (the University of Zagreb) in 1993. As a part of a smaller university, the average size of organisational units also tends to be smaller, which would make this phenomenon more reasonable to comprehend, but in the data, on the contrary, nearly all such examples come from large to very large universities. Vice versa it seems that most faculties in smaller universities focus on the more established, well-known and universal disciplines.

Secondly, some faculties have been targeted at a limited or specific group of students or studies only. Examples include a faculty for workers and peasants (for pre-university studies only) at *Ernst-Moritz-Arndt-Universität Greifswald* (the Ernst Moritz Arndt University of Greifswald) in 1962, a faculty for correspondence studies at *Belorusskij Ordena Trudovogo Krasnogo Znameni Gosudarstvennyj Universitet im. V. I. Lenina* (the Byelorussian State University (Minsk)) from 1974 to 1993, and a faculty of evening studies at *Vilnius Darbo Raudonosios Vėliavos Ir Tautu Draugystės Ordinu V. Kapsuko Universitetas* (the Vilnius V. Kapsukas State University) from 1974 to 1993. It is notable that all such cases belong to Soviet-influenced university models, undoubtedly with an intentional societal agenda; in addition to faculties (F) these also often include departments (D) or institutes (I) with the same target groups. I will return to this issue in 5.2.9 and 5.3.5.

Thirdly, in the universities affiliated with the French, Russian and Soviet-influenced HES models, some faculties are numbered in addition to naming. For example, *Martin-Luther-Universität Halle-Wittenberg* (the Martin Luther University of Halle-Wittenberg), formerly of Soviet-influenced East Germany, in 2013 had ten faculties (10F), out of which six were the Faculty of Philosophy I, Faculty of Philosophy II, Faculty of Philosophy III, Faculty of Natural Sciences I, Faculty of Natural Sciences II and Faculty of Natural Sciences III. Considering that each of these faculties still operates within clearly defined more

specific disciplines – like the Faculty of Philosophy II has philological and cultural studies and the Faculty of Natural Sciences I has biological science – one may wonder why these disciplines are not reflected in the names of faculties as well? My data by its nature however cannot answer such a question.

Fourthly and finally, in all four Dutch universities, following the amalgamated French & German HES model, Dutch/Belgian/Luxemburger adaptation (FGdbl), between 1962–1993 there are so-called ‘combined faculties’ or ‘interfaculties’, which have unusual and/or complex combinations of disciplines within them. For instance, *Vrije Universiteit* (the Free Reformed University (Amsterdam)) in 1962 had a ‘Combined Faculty of Medicine and Arts (Psychology)’ at the same time it also had an independent Faculty of Medicine and a Faculty of Arts. For the purposes of scientific matters, some in-between-disciplines like psychology in this example, itself between or a combination of the arts and medicine, did not always have their own normal faculty organisation, but instead ‘borrowed’ theirs as a partial combination from some of those representing the nearest larger disciplines. In some instances these units had their own dean and also academic staff, while in other instances they had a ‘chairman’ instead, who was the ‘borrowed’ dean of some of the normal faculties concerned. Coming to data year 1993, all such faculties of all four Dutch universities had already been converted to normal-type faculties. Organisation-wise no other universities outside the Netherlands had this type of faculties or other units, even though many universities in the data do have affiliate units and branches in other cities, even countries, which often also do have an unusual and/or complex combination of disciplines because of geographical reasons. For instance, the University of Sheffield in 2013 had a single international ‘Combined Faculty of Arts and Humanities, Social Sciences, Economics, Psychology, Business Administration and Computer Science’ in Thessaloniki of Greece.

It can be summarised that *throughout the half-century period of study, faculties (F) remain the most essential organisation unit category at level U-1* and help to divide the greater organisation of entire universities into equal, but often organisation- and configuration-wise not in other ways similar disciplines. The fundamental task of the faculties as units has remained quite stable since the middle ages: they exist in the universities’ professional organisation primarily to divide the internal structure of universities between the various disciplines of science and to internally unify these disciplines.

5.2.3 The Departments and Institutes as the Fundamental ‘Levels Below’ Structures

Departments (D, for ancestry see 4.5.4) in the data represent 511 and institutes (I, for ancestry see 4.5.4) 435 approximate disciplines or their combinations. There is no emphasis of scientific fields among of them. These numbers are by far larger than any other unit category type has, which reflects well the fact

that their central task has been to function as the ‘levels below’ structures, mostly under the faculties. The departments also often function as the U-1 level main structure in universities, which do not have a faculty (F)- or a college (C)-structure, as is the case at many technical universities. The departments’ (D) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 14 and 15.

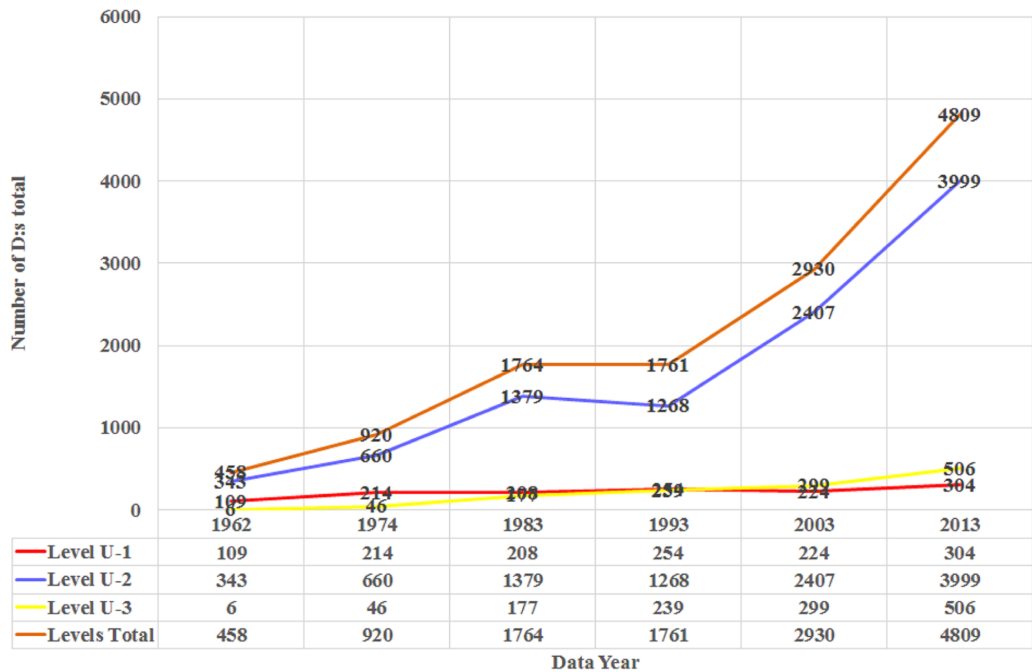


Figure 14. Departments (D) in the data per their organisational level (U-1, U-2 and U-3) location.

Figure 14 demonstrates clearly that indeed most departments have been created at the U-2 level, and that the speed of their creation at this level accelerated as a function of time, which means that *existing universities have constantly diversified with more and more units at their lower ‘levels below’*. The only short pause in this trend occurred between 1983 and 1993, the same period when European reactions to widespread economic recession had created the first fundamental changes in many national HESs and the HEIs’ governance models were reformed with elements like NPM and the organic growth of higher education was then also intentionally confined (see 4.5.6 for details). In Mintzbergian contingency terms, this can be interpreted so that the attributes of the universities’ environments – like funding – as well as their power relationships during that period became factors that on average, hindered their further departmentalisation. At levels U-1 and U-3, the number of departments has remained relatively low and stable throughout the study period, with the U-3 level slightly overtaking it just in recent years.

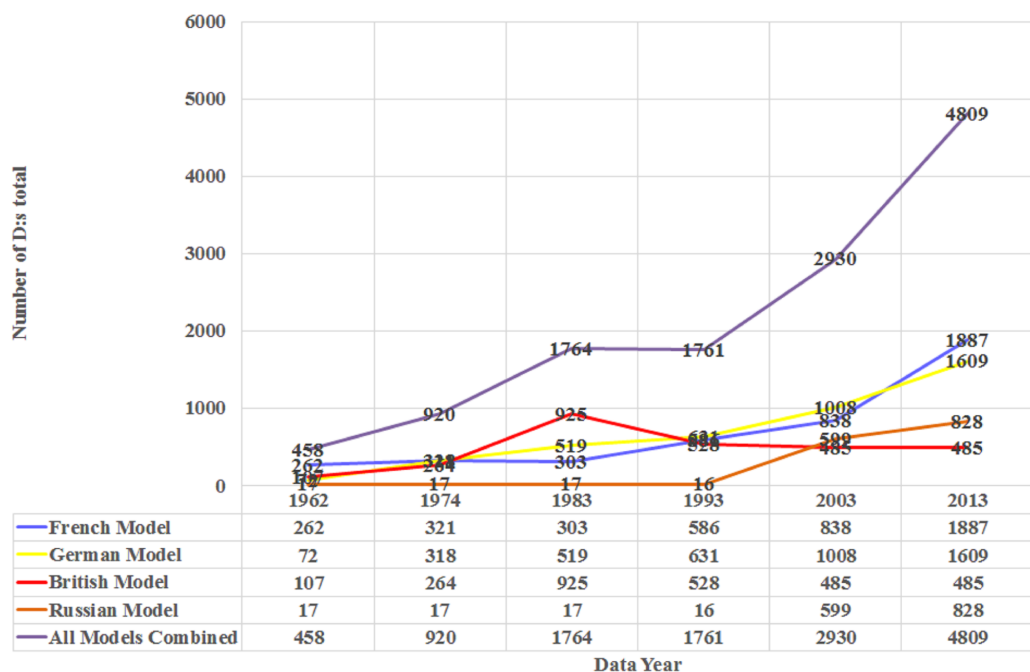


Figure 15. Departments (D) in the data per their HES model affiliation.

Figure 15 shows that *the ‘departmentalisation’ development has been exceptionally strong in the British HES model affiliated universities in 1974–1983 and in the Russian HES model affiliated universities since 1993*. As described in 5.1.1, in Britain the pressure for more higher education in the 1970s and 1980s was focussed more on creating additional units in existing HEIs than founding new ones, at least until the polytechnics gained university status in 1992. Also, the last two decades of the Soviet Union were mostly a time of stagnation, which can again be interpreted as a contingent factor of the universities’ power relationships discouraging of change or development in the structures of universities affiliated with the Russian and Soviet-influenced university models. Then again, a fundamental change in that power relationship factor brought about by the collapse of the Soviet systems in 1991 surely also reflects the rapid development of change since (see 4.5.5 for details). However, since most of such reforms started sporadically afterwards and took some time to get going, their effect in the data was not yet visible in 1993, but was from 2003 onwards.

Even as the *departments (D) have become the most numerous, dominant and general of all the organisational unit type categories* in recent decades, at the same time defining them precisely or explaining their historical appearance in detail is also the hardest of all unit type categories. The English word ‘department’ in itself is vague and tricky in that it has several meanings: in addition to referencing a unit of formal organisation, in a discussion or in an official document, any part of a larger organisation

can be casually referred to as being a ‘department’, this literally meaning a smaller part of the larger organisation. Especially in the British HES model affiliated universities before 1983, departments (D) seem to arise from inside faculties (F) or colleges (C) in a covert way. For instance, in the 1950s, as a part of a faculty of science, an academic major subject like chemistry has three professorial chairs, eight lecturers and a chemistry laboratory in the wider context of the unified faculty. In such a context both the professors and students of chemistry can easily perceive and speak of ‘their department’ even if it does not exist as a formal organisation unit. When this continues for several years, then in the 1970s the existence of this department of chemistry along with several other such departments is formalised when the university is officially presented and listed. Nonetheless, the annual report of the department in the 2000s describes its own history in the following way: ‘Our department originated in 1872, when the first professor of chemistry was nominated to the faculty of science. Today the department of chemistry is...’ So, just as the term ‘faculty’ has two meanings referring both to organisation and academic staff in different contexts and HES models, the case is an even more complicated one with ‘department’, which can mean anything from a list of teachers of a certain discipline in the dean’s desktop file, a collaboration of employees formally engaged in the same subject, a single professorial chair, or a highly independent, large and formalised U-1 level unit of organisation with hundreds of staff and several subunits of its own. All this being written, I must emphasise that in the research data, departments (D) have been listed as units of university organisation if and only they also have some formal recognition as such.

Furthermore, even inside the same university there can be more than one type of department (D), depending on national terminology. This is demonstrated with *Uniwersytet Jagielloński w Krakowie* (the Jagiellonian University Cracow) in 2013, which has as equal departments at the U-2 level both in *zakład* (literally ‘institute’, but not to be confused with *instytut* that also exists in the university as institute (I) in the same U-2 level) and *katedre* (literally ‘chair’ in reference to professorial chairs). Often one type of departments exist at U-2 level and another type at U-3 level, as at *Sveučilište u Zagrebu* (the University of Zagreb) during the entire period from 1962 to 2013: there are *odsjek* at level U-2 and *zavodi* and *katedre* at level U-3. In the British HES model affiliated universities, the departments belonging to different levels are sometimes distinguished with additional terminology: departments at the U-1 level are called ‘university departments’, while departments at the U-2 level and/or as a subunit to an another type of unit are called ‘integrated departments’.

The institutes’ (I) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 16 and 17. Figure 16 demonstrates that unlike the constantly growing number of departments (D), institutes (I) have maintained their average number consistently through the 50-year study period. In 1962 and 1974 they were still much

more common than departments, in 1983 and 1993 about as common, and since 2003, less and less common. They were also almost nonexistent at level U-3 before 2013.

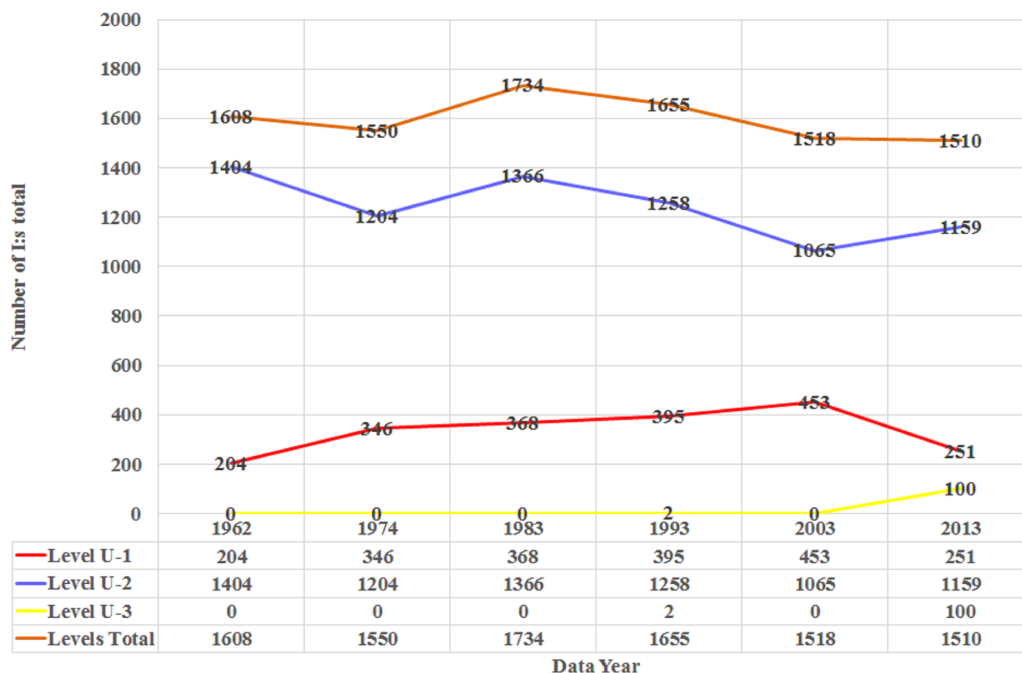


Figure 16. Institutes (I) in the data per their organisational level (U-1, U-2 and U-3) location.

Figure 17 demonstrates that while institutes (I) have constantly been an integral part of both the German and French HES model affiliated universities, they have quite been rare in both the British HES model and especially the Russian HES model affiliated universities. The fast increase of numbers of institutes in the French HES model between 1962 and 1983 was a side phenomenon of the large French HES reforms after 1968, where the U-1 level main structures were reformed in the following way: a smaller number of faculties (F) at the U-1 level were replaced with a greater number of units (Ut) at the same level, while independent institutes (I) simultaneously remained the usual choice companion of both.

As both departments (D) and institutes (I) are used as the discipline- or main subject based ‘lower’ units under the faculties (F) or some other U-1 level main unit structure, the question raised in 5.2 was why has the number of institutes stayed quite stable through the 50-year period studied, while the number of departments during the same period has kept on increasing. There are at least two possible answers. Firstly, during the 1960s and 1970s institutes were the more popular unit type to be used under U-1 level main structures, whereas departments, if they existed at all, were often reserved for special tasks like

inter-faculty foreign language teaching, physical education, continuing and evening studies etc. But by latest in the 1980s, these roles and sometimes even the terminology was changed contariwise, which meant that the departments became the main lower units while institutes often became independent U-1 level units or research units at any level. The example of *Helsingin yliopisto* (the University of Helsinki) demonstrates this well. This is presented as Notation case 2 of Appendix 4. Secondly, as the ‘old type’ institutes diminish from the lower levels, they are gradually being superseded by a growing number of newer institutes that are research units, especially in the German and British HES model affiliated universities and also at new U-3 levels after reforms created more of them.

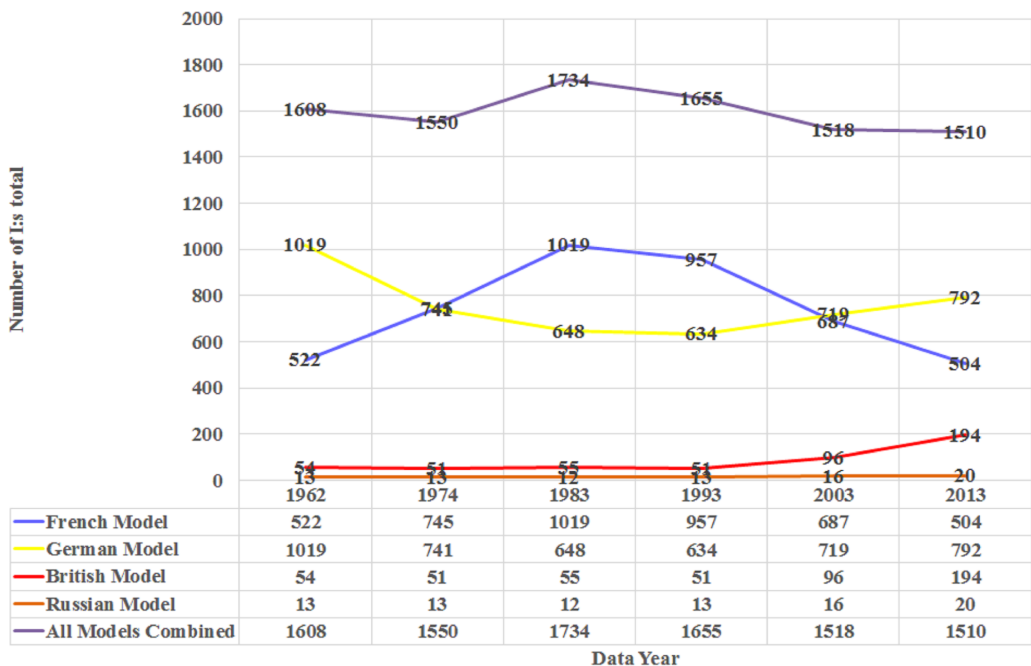


Figure 17. Institutes (I) in the data per their HES model affiliation.

It can be summarised that *departments (D)* and *institutes (I)* remained throughout the 50-year period of study as the most important ‘levels below’ structures and organisation unit categories at level U-2, even if the number of institutes remained quite stable at the same time that the number of departments increased faster then any other organisational unit category in the data. Perhaps the strongest visible trend in all my findings on the category types of the Mintzbergian professional organisation units of universities is the continuous and widespread ‘departmentalisation’ phenomenon. Regardless of the HES model affiliations, throughout from 1962 to 2013, the number of departments increased over tenfold.

5.2.4 The Faculty Alternatives: Colleges, Units, Sections, Schools, Seminars and Academies

Next I am going to have a closer look at each of those unit category types which in universities are most often used as alternatives to the main structure of U-1 level faculties (F) (or sometimes departments (D)) or also alongside them as parallel units at the same level. These are the colleges (C), units (Ut), sections (Sec), schools (S), seminars (Sem) and academies (A).

Colleges (C, for ancestry see 4.2.5) in the data represent 67 approximate disciplines or their combinations. There is no emphasis of particular scientific fields among them, but college is the only unit category type in the data which is more often named with a proper noun than its discipline (of which large colleges can have several). As described in 4.2.5 on the early medieval colleges, the combination of active teaching given on site and residence (at least for the students) is still at the core of the idea of most colleges, especially in the British and to some extent also French HES model affiliated universities. In the data, the best examples of such organisations come from the University of Oxford and University of Cambridge, in which the dozens of colleges have been the most important U-1 level structure through the study period, even as they exist on that level alongside other types of units.

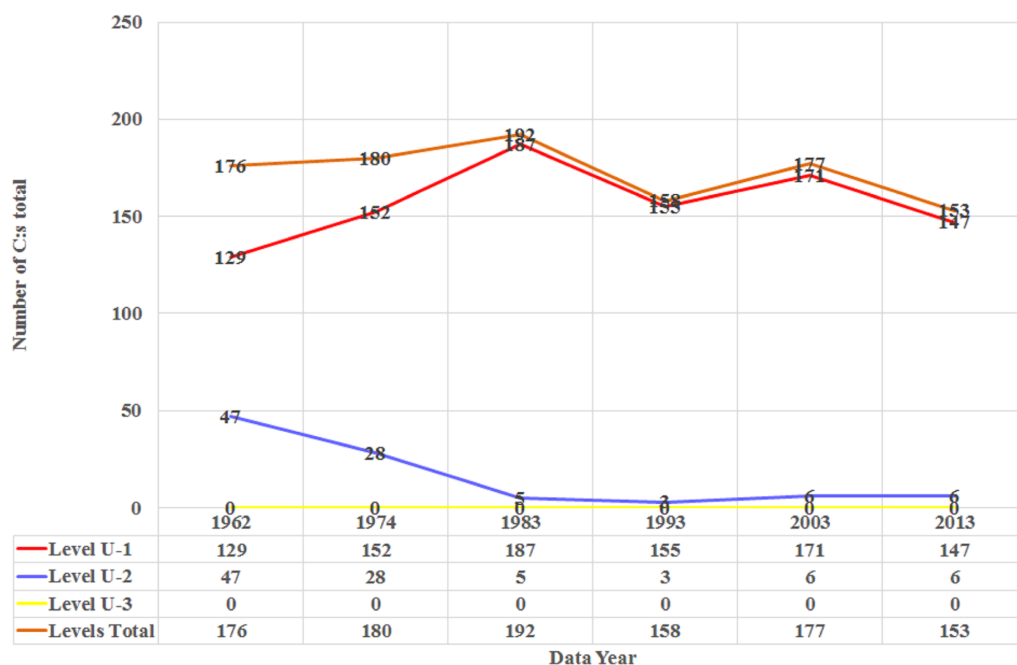


Figure 18. Colleges (C) in the data per their organisational level (U-1, U-2 and U-3) location.

However, there are other types of colleges that operate either in education without the students' residence criteria, or as an affiliate unit of a university in other than its native city, also called a college. Outside the British HES model, *Universidad de Santiago de Compostela* (the University of Santiago de Compostela), representing the Italian/Spanish/Portuguese/Vatican adaptation of the French university model (Fispv) has had all the above types of college in its organisation at some phase. Throughout the study period, there has been both a structure of colleges supporting a main structure of faculties at the U-1 level, as well as a number of *Colegios Mayores* of the student residence combined with teaching type. One final option is the college as a research unit of academic researchers, often in the field of human and social sciences, belonging in particular to the German HES model affiliated universities.

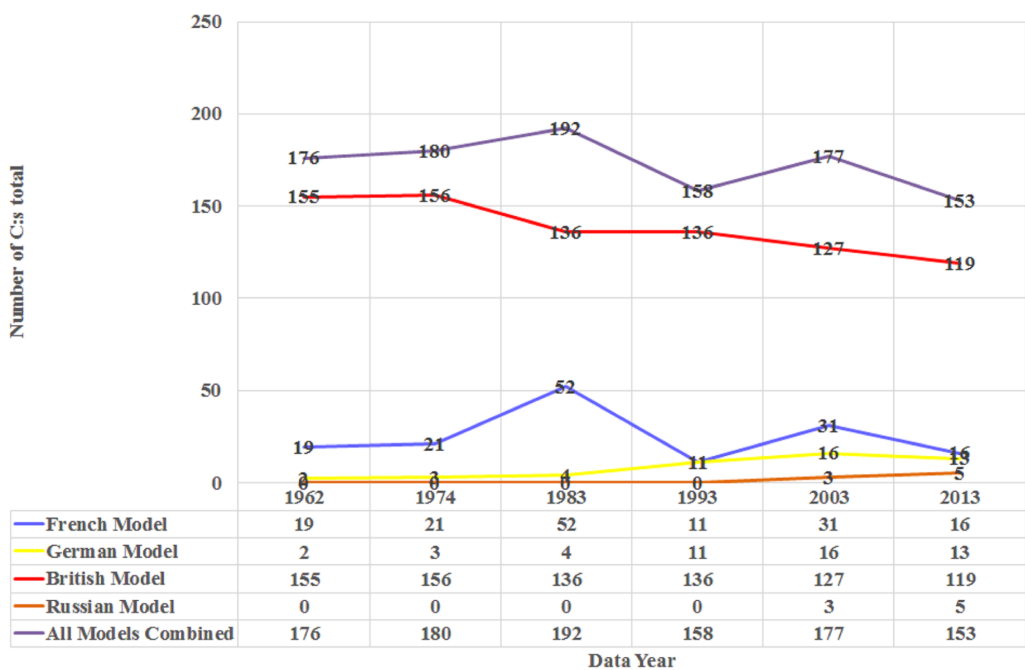


Figure 19. Colleges (C) in the data per their HES model affiliation.

The colleges' (C) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 18 and 19. Figure 18 demonstrates clearly that colleges (C) are almost always level U-1 units and even more so since 1983, before which they existed in greater numbers in such British HES model affiliated universities at level U-2, which have since mostly totally given them up. In the data, colleges never existed at level U-3 at all. Even as their total number fluctuates and has again slightly declined from 2003 to 2013, the college has proved itself in the long run to be a most stable and durable type of university organisation unit. Figure 19

demonstrates the fact that colleges have always been primarily a unit type only of the British HES model, with some representation from the French university model, and especially its Mediterranean affiliated university followers. Colleges are all but nonexistent in the Russian HES model affiliated universities, but in the German HES model affiliated universities, their numbers have somewhat increased since 1993.

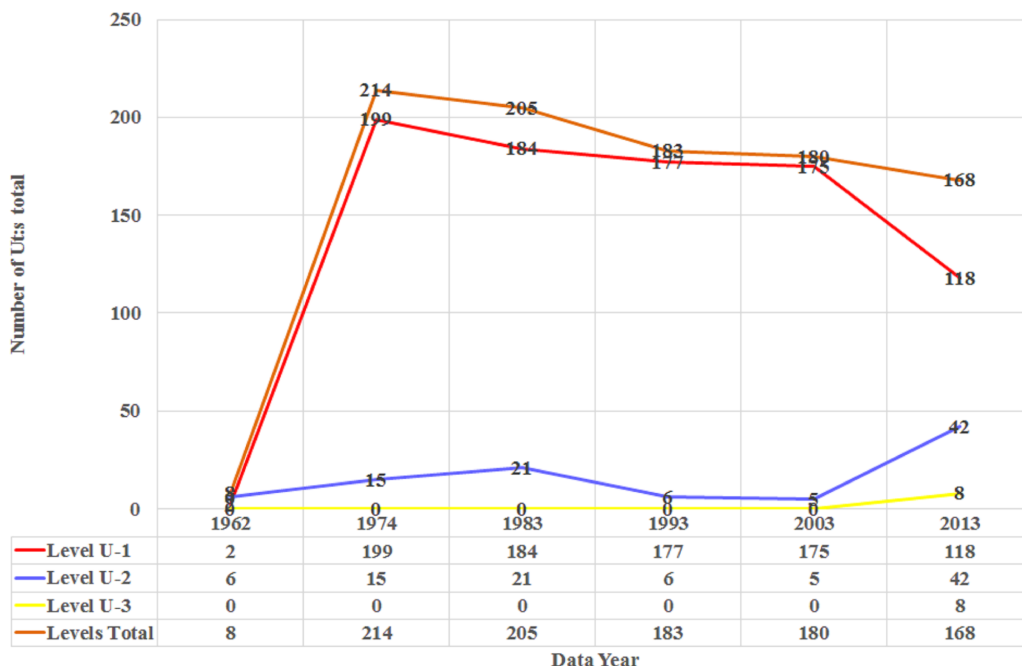


Figure 20. Units (Ut) in the data per their organisational level (U-1, U-2 and U-3) location.

Units (Ut) in the data represent 156 approximate disciplines or their combinations. There is no emphasis on particular scientific fields among them. Units were particularly popular in the French HES reforms after 1968, when most of the French universities' main faculty (F) structure at the U-1 level was more or less replaced with a structure of units (Ut) – in French *Unités de Formation et de Recherche (UFR)*, that is Training and Research Units – the number of which was greater than the faculties to be replaced at the same time. The curious fact of this reform is that it took many universities well over a decade to complete, and also after it was 'completed', there were still several faculty (F) elements within the organisations of French universities. Later many of these reformed unit (Ut) structures reverted back to faculty (F) based structures, but again with only partial success. This left the organisational structures of many French universities in a tangled and incoherent state. *Université de Dijon/Bourgogne* (the University of Burgundy, Dijon) represents this 'partially back and forth' structure between faculty (F) and unit (Ut) structures remarkably. This is presented as Notation case 3 of Appendix 4. Naturally there

are also other types of units (Ut) in the data, which often in a university represent a small number of individual or irregular units that are somehow difficult to fit into any of the more traditional categories.

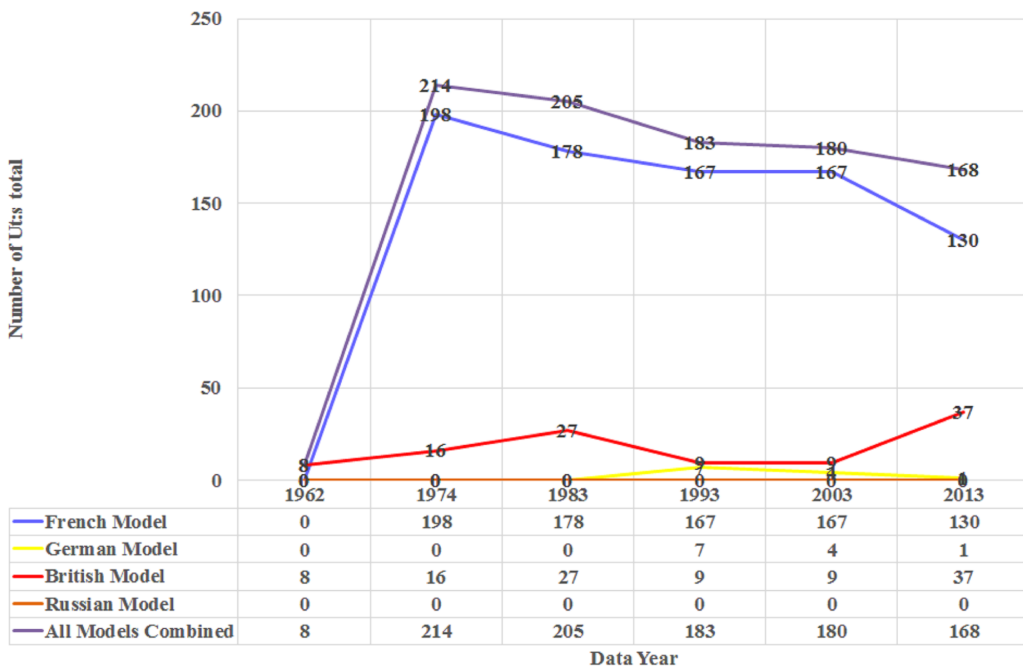


Figure 21. Units (Ut) in the data per their HES model affiliation.

The units' (Ut) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 20 and 21. Figure 20 clearly demonstrates the overwhelming share of units (Ut) placed at the U-1 level, as particularly was the rule in the French HES reform of 1968. As some of such universities later gradually returned to faculty (F) based main structure especially since 2003, the numbers of those units (Ut) again dropped at the same time as the number of newer, mostly research-function units (Ut) at level U-2 and to some extent even at level U-3 ascends. Figure 21 has a close shape resemblance to Figure 20 and it re-demonstrates the French 1968 reforms' unit (Ut)-effects. In addition, it can be concluded that units (Ut) are nonexistent in the Russian HES model affiliated universities, barely exist in the German HES model affiliated universities, but to some extent are a visible part of the British HES model affiliated universities.

Also, sections (Sec) have various representations in the data, but as the units (Ut) were an alternative organisation unit category in the French reform, the majority of sections had precisely the same function for all East German universities as part of their 1960s HES reform (see 4.5.5 for details). In the German

Sektionen, that is section (Sec) reform the central idea was to match each scientific subject being taught in a university by a corresponding subject section as a basic unit of the professional organisation. At the same time, this would reform the organisation to be composed of a greater number of more equal and more similar units, that would also simultaneously eliminate the need for most subunits. Thus, the sections replaced two structures of university organisation at one time: both the faculties (F) at U-1 level and the institutes (I) – and possible other units – at U-2 level were to be replaced with sections (Sec) that were in size and function something ‘in-between’ of faculties and institutes. This meant that faculties (F) often existing in many sizes even inside the same university were divided into sections, which were much closer to one another in terms of their size. Then smaller faculties, like those of law or theology, were often converted directly to sections as they were, while large philosophy, arts or science faculties could be divided into as many as over 10 sections each! Simultaneously this reduced the overall number of organisation levels from two to just one. At *Humboldt-Universität zu Berlin* (the Humboldt University, Berlin), this drastic reform replaced a total of 214 units with just 27. This is presented as Notation case 4 of Appendix 4. However, unlike in the HES reform aftermath in France, after the Communist regime in East Germany had fallen, the universities quite quickly reverted to a faculty (F), institute (I) or department (D) based structures or a combination of either all or two of the three, which meant that nearly all sections (Sec) and main structures based on their organisation dissipated quickly.

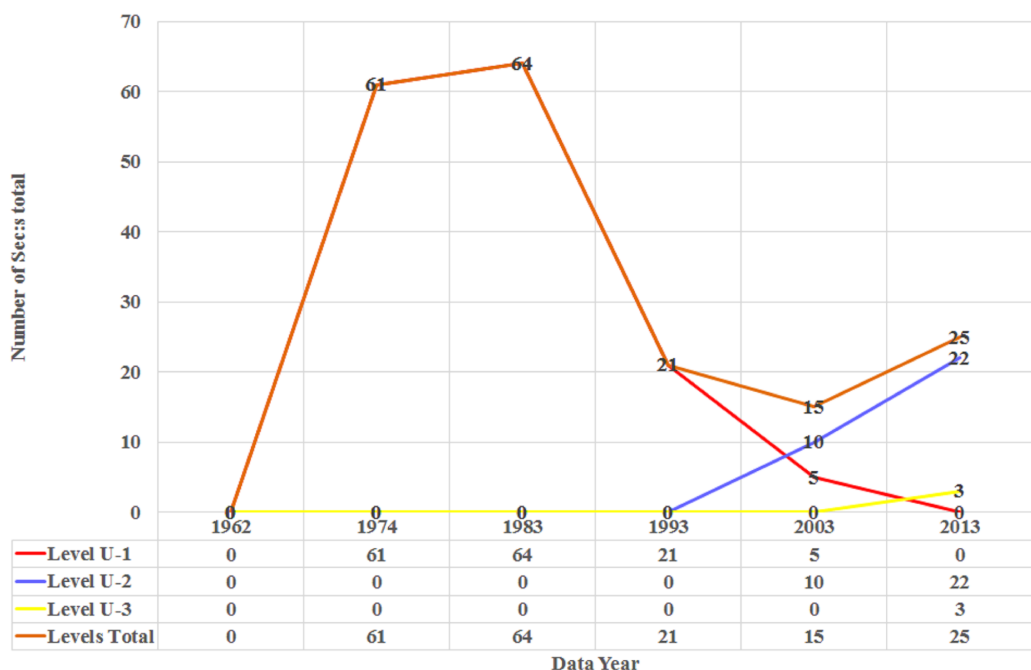


Figure 22. Sections (Sec) in the data per their organisational level (U-1, U-2 and U-3) location.

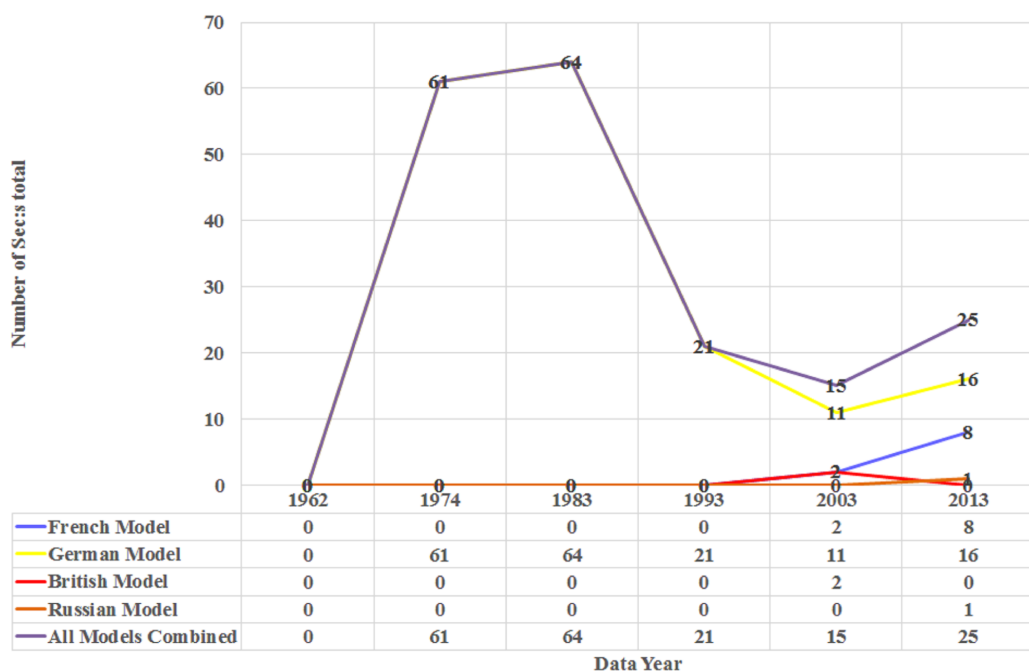


Figure 23. Sections (Sec) in the data per their HES model affiliation.

Sections (Sec) in the data represent 44 approximate disciplines or their combinations. There is no emphasis on particular scientific fields among them. The sections' (Sec) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 22 and 23. Together they clearly demonstrate the rapid 'rise and fall' of the East German sections (Sec) as level U-1 units. The sections at U-2 level are mostly a newer type of research-combinatory units belonging to the German and French HES model affiliated universities. Even though there are a few isolated instances in the period 2003–2013, sections practically do not exist in the British or Russian HES model affiliated universities, although the East German sections were indeed a conscious ideological project of a Soviet-influenced German university model.

Schools (S, for ancestry see 4.5.4) in the data represent 160 approximate disciplines or their combinations. There is no emphasis on particular scientific fields among them. As organisation units, the schools are diverse, but at the same time are a somewhat obscure unit category, because along with institutes and departments, they are hard to define precisely. From the quality attributes of the data it can be concluded that there are many types of schools (S) belonging to several types of universities. Still, some generalisations can be made. Schools by nature inherent in their category name are almost never research units and mostly are not involved in research in the first place.

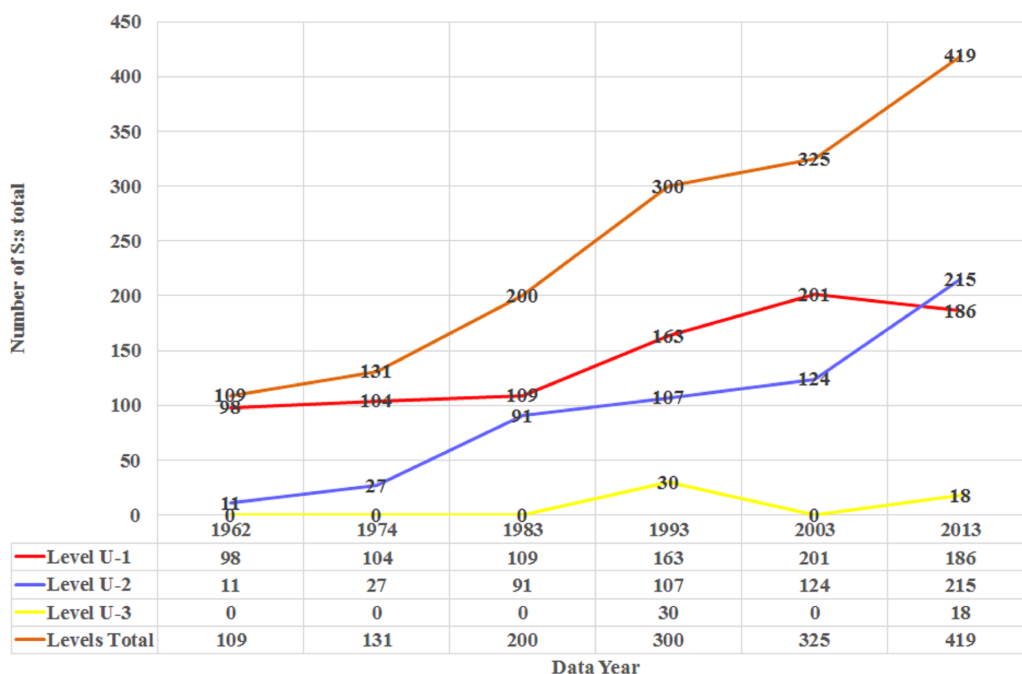


Figure 24. Schools (S) in the data per their organisational level (U-1, U-2 and U-3) location.

The schools' (S) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 24 and 25. Figure 24 demonstrates mainly that as the schools (S) have existed at level U-1 throughout the study period, the temporal growth in the number of units has been focussed at level U-2 during that time, where the number of schools has never stopped ascending, unlike at level U-1 since 2003. There is only a small number of schools at level U-3, but the overall number of schools also just keeps on growing.

Figure 25 demonstrates that *schools (S) are an integral part of the French, British and even German HES model affiliated universities' organisation* and that the number of schools has in all of them through the study period been constantly ascending with just two exceptions. Of these, the number of schools in the French HES model affiliated universities declined unexpectedly from 1993 to 2003. This descent was caused by most Italian universities in the data which for some reason lost their U-2 level schools in large numbers during the same years. Even though there were two isolated instances between 2003 and 2013, in the data, schools mostly do not exist in the Russian HES model affiliated universities.

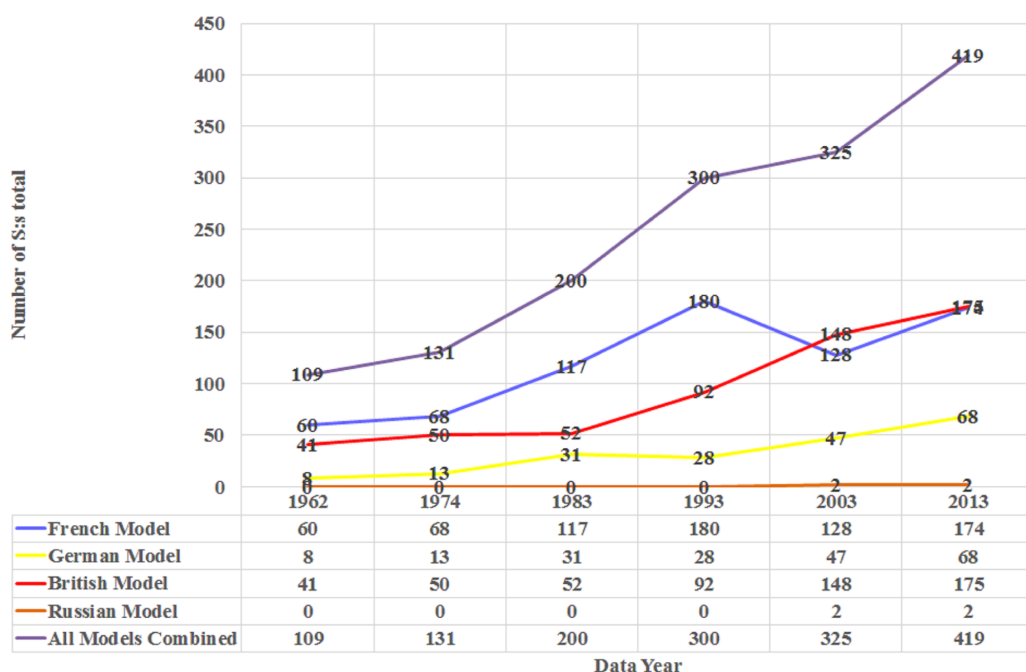


Figure 25. Schools (S) in the data per their HES model affiliation.

The *U-1 level main structure is practically never originally composed only of schools* or have them as the main unit type, but instead they exist individually or in smaller numbers at the U-1 level alongside some other unit category forming the main structure. The way schools are exhibited in U-2 and U-3 levels is not very different either. The fact that schools by themselves ‘ecologically’ never make up the main structure is compelling. It is because the French, German and Russian HES models are all originally faculty (F) based at the main structure, while the British HES model is college (C) based. The technical universities are usually department (D) based, because they mostly began as independent institutes (I) or faculties (F) of technology, which were later divided into department (D) subunits as they grew. But this also means that schools (S) have often been the choice unit type to replace the original U-1 level main structure when major university reforms or mergers have been carried out that change the levels balance and basic unit types (cf. also Kohvakka & Nevala 2020, 105, 110–119, 150). In this way the schools have functioned at individual universities as the units (Ut) and sections (Sec) functioned in the aforementioned 1960s collective HES reforms in France and East Germany. In the data there are seven universities at which this occurred and the U-1 level main structure has been at some point replaced with schools (S) only. Two British cases are the universities of Cambridge and Exeter, while all other such occurrences belong to the German HES model affiliated universities and to the 21st century; only in universities of technology did this occur earlier. However, when such a major university reform has once

been done, it has often not been found to last permanently, but has again later been replaced with something else. An example from *Chalmers Tekniska Högskola* (the Chalmers Institute/University of Technology (Gothenburg)), where a basic U-1 level department (D)-structure was first replaced with a school (S)-structure and then eventually over two decades later, again with a department (D)-structure, will demonstrate this finding well. This is presented as Notation case 5 of Appendix 4.

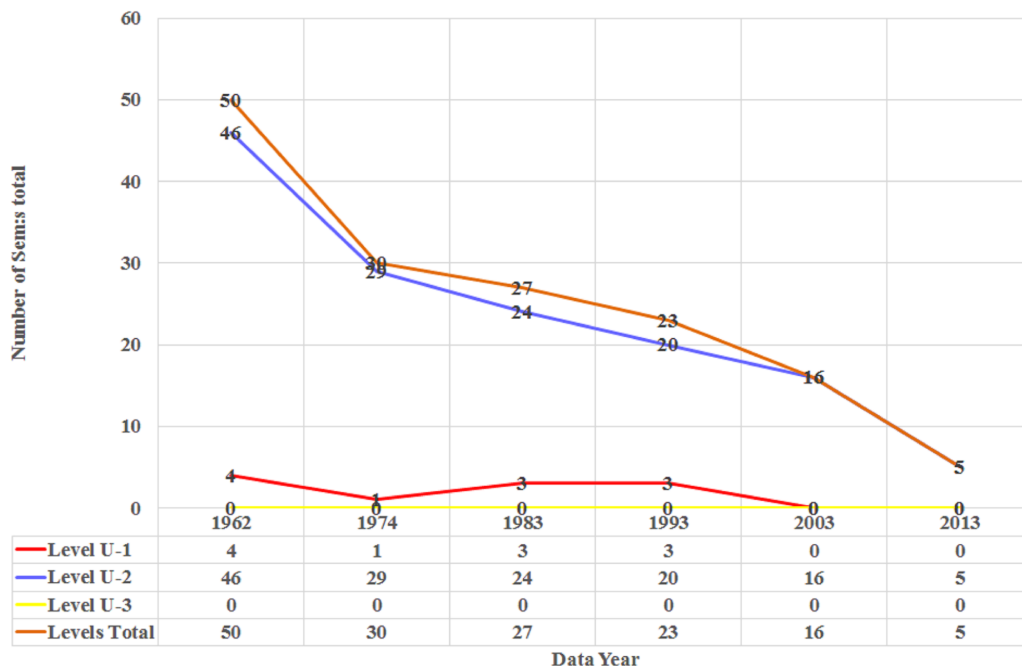


Figure 26. Seminars (Sem) in the data per their organisational level (U-1, U-2 and U-3) location.

Seminars (Sem) in the data represent five approximate disciplines, which are quite set. The classic ones are teacher's (educational) seminars and theological seminars, but there are also seminars for mathematics, international law and modern languages. The seminars' (Sem) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 26 and 27. They paint a joint picture of historically traditional units, which over time have slowly become obsolete and have thus almost systematically been replaced or merged with other unit types, such as faculties (F), institutes (I) and schools (S). Seminars belong clearly to the German and French HES model affiliated universities as 'lower' units at the U-2 level, where they mostly exist alongside other unit types, such as institutes (I) and Clinics (CI). In the data, Seminars never exist at level U-3 or in the British or Russian HES model affiliated universities.

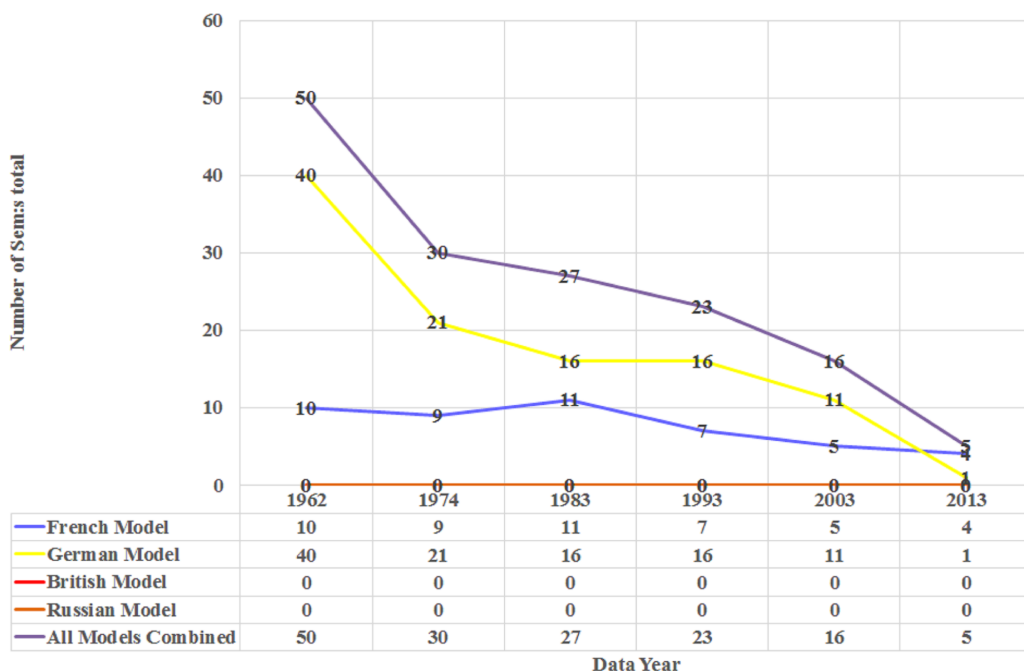


Figure 27. Seminars (Sem) in the data per their HES model affiliation.

The academies' (A) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 28 and 29. Academies in the data represent nine approximate disciplines or their combinations. These include various types of art and culture, music, theatre and education, but also single instances of natural sciences and diplomacy. Figure 28 demonstrates that practically all the few academies (A) in the data exist individually at the U-1 level alongside other units that make up the main structure. Only three academies are found at the U-2 level only in 2013, and they never exist at the U-3 level. Still, the total number of academies has grown constantly through the study period. Figure 29 demonstrates that the majority of academies through the study period have belonged to the French HES model affiliated universities, while the few academies in the British and the German HES models affiliated universities mostly show up only after 1993. In the data academies never exist in the Russian HES model affiliated universities.

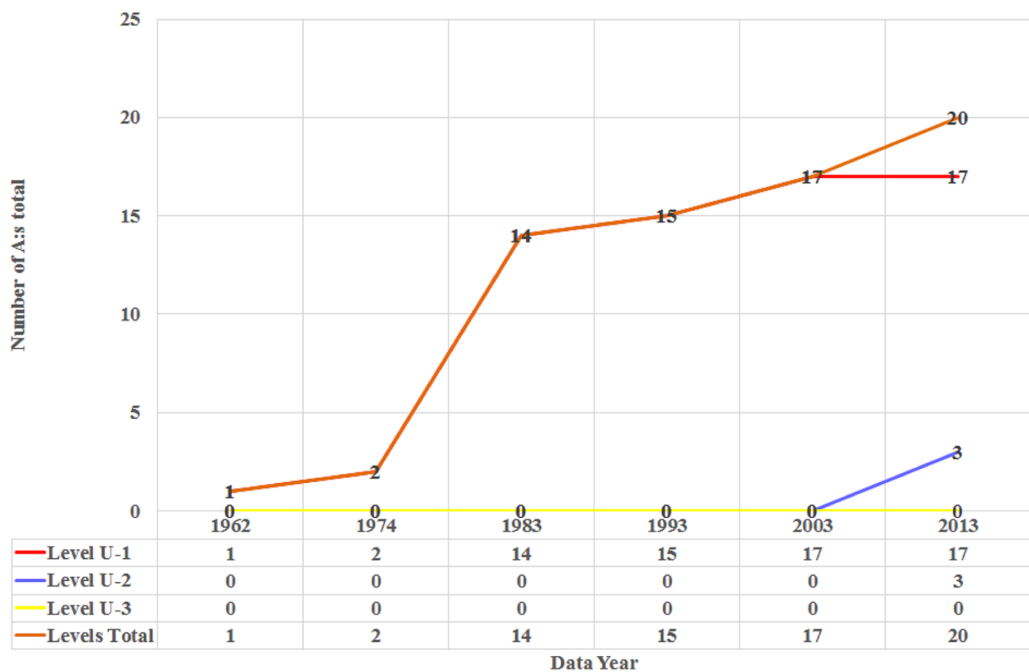


Figure 28. Academies (A) in the data per their organisational level (U-1, U-2 and U-3) location.

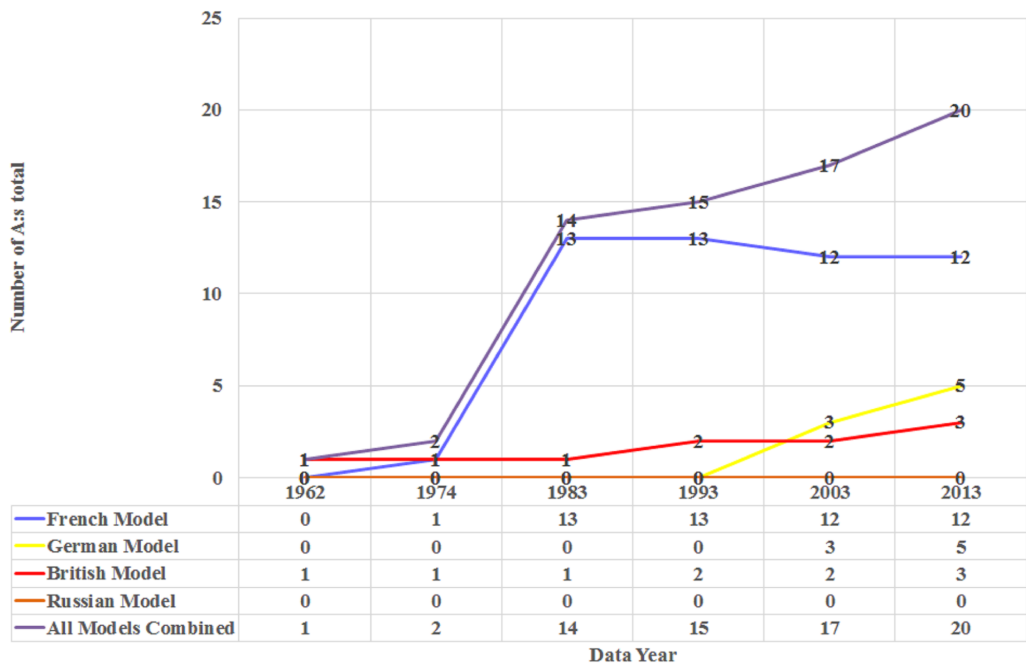


Figure 29. Academies (A) in the data per their HES model affiliation.

5.2.5 The ‘Levels Below’ Alternatives: Clinics, Laboratories and Stations

I will now turn to those unit category types which are used either as alternatives to the main ‘levels below’ units (normally departments (D) and institutes (I)) at U-2 and U-3 levels, but mostly alongside them at the same level as parallel units. These are the clinics (CI), laboratories (L) and stations (St), a clear majority of which exist in the scientific fields of pure and applied natural sciences only, even as laboratories are basically found regardless of disciplines.

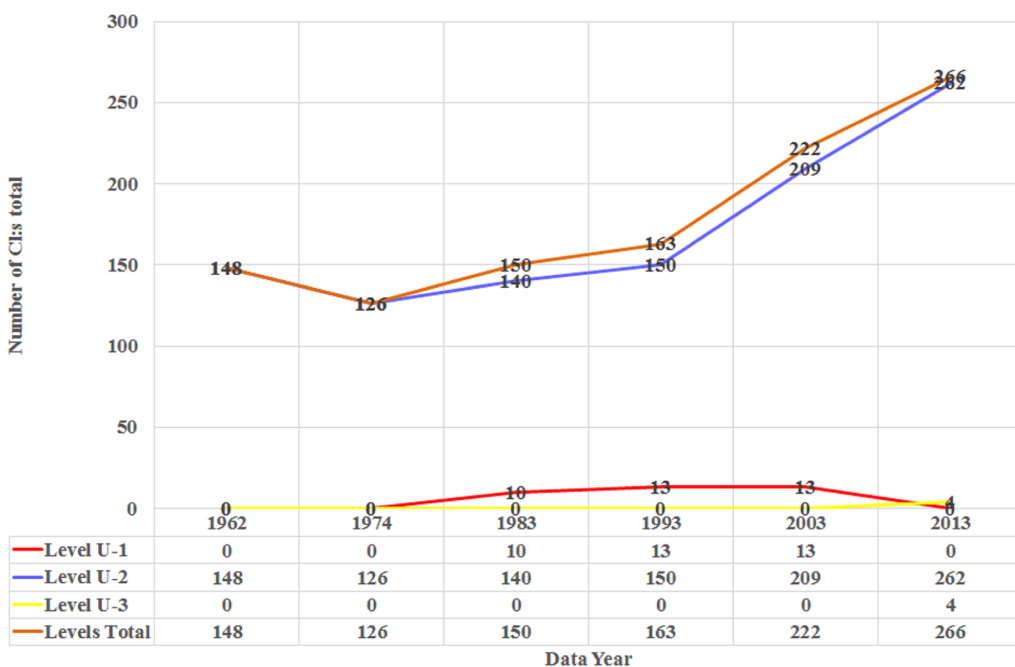


Figure 30. Clinics (CI) in the data per their organisational level (U-1, U-2 and U-3) location.

Clinics (CI) in the data represent 100 approximate disciplines or their combinations, which however all represent just medical fields one way or the other. Hence the clinics are probably the most discipline-tied of all organisation unit category types, even as there is a profusion of fields of medicine. Clinics usually do participate both in tasks of education as well as research. The clinics’ (CI) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 30 and 31.

Figures 30 and 31 demonstrate first that clinics (CI) are practically always U-2 level units. The 10 to 13 U-1 level clinics in 1983–2003 all represent a single university, *Karl-Franzens-Universität Graz* (the

(Karl Franzens) University of Graz), and even there in 1974 they were still U-2 level units. Clinics are also nonexistent at level U-3 apart from a few isolated instances in 2013. Considering that they are all units of the medical fields only, clinics are found in abundance from both the German and the French HES model affiliated universities, but do not exist at all in either the British or the Russian HES model affiliated universities. This does not mean that the latter would not have clinics of any kind within their medical faculties (F) or other corresponding main structure units, but instead that clinics never appear in these universities as independent units of organisational structure.

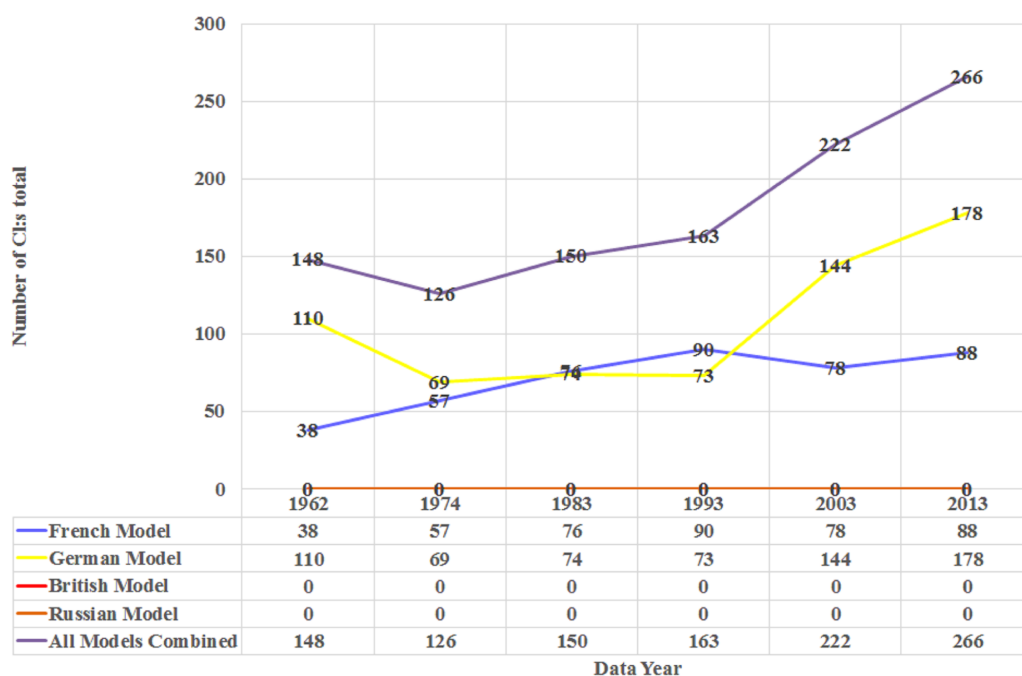


Figure 31. Clinics (Cl) in the data per their HES model affiliation.

Laboratories (L) in the data represent 99 approximate disciplines or their combinations. Most of them operate within the fields of pure and applied natural sciences, but they are found to some extent in all disciplines, even as the practical set up of a laboratory in say, biochemistry surely differs from laboratories in fields like anthropology, architecture, home economics, languages or sociology studies (as case examples from the data). The laboratories' (L) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 32 and 33. Figure 32 demonstrates that laboratories are found from all three organisational levels of universities, even as they have nearly always been most populous at the U-2 level. The sharp decline in the number of laboratories from 1983 to 1993 and further to 2003 was most probably caused by two

phenomena: First, the low rate of economic growth of the time and rising trends like NPM discussed in 5.2.3, which alongside the departments (D) also cut their discipline-tied laboratories (L). Secondly, especially in the British HES model affiliated universities, where the laboratories had mostly been independent organisation units of universities from the 1960s to the 1980s, they were merged with their shared-discipline departments (D), schools (S) or to newer types of research unit categories, such as research centres (RCe) and research units (RU) coming to the 1990s.

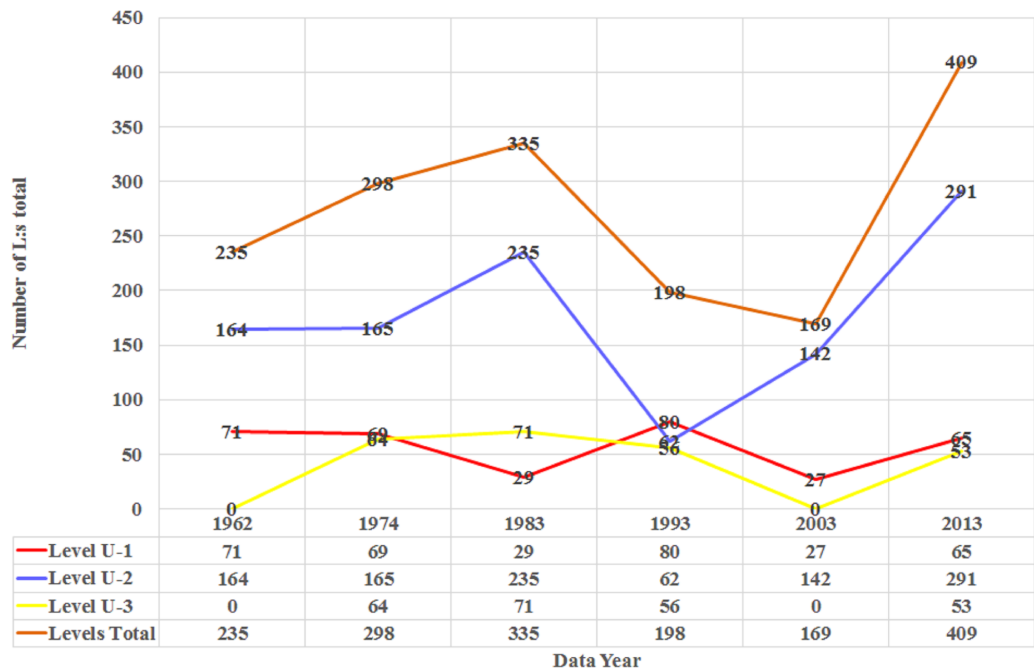


Figure 32. Laboratories (L) in the data per their organisational level (U-1, U-2 and U-3) location.

Figure 33 demonstrates the same phenomenon of ‘merging’ laboratories (L) especially with the British HES model, in which their numbers declined rapidly from 1983 to 2003. The stable level of laboratories in the German and the Russian HES model affiliated universities shows that they had fewer laboratories as independent organisational units than the British HES model affiliated universities had, especially during the 20th century. The number of laboratories in the French HES model affiliated universities first conformed to the development of the German and Russian HES models, but then grew rapidly since 1993. These new laboratories, particularly in France itself, were often not of the same ‘type’ as those of the previous decades, but belonged to a new French research infrastructure, which has a joint or double structure of units that time belong both to the universities as well as the organisation of CNRS (see 4.4.5 for details) or other French national research organisation as research units.

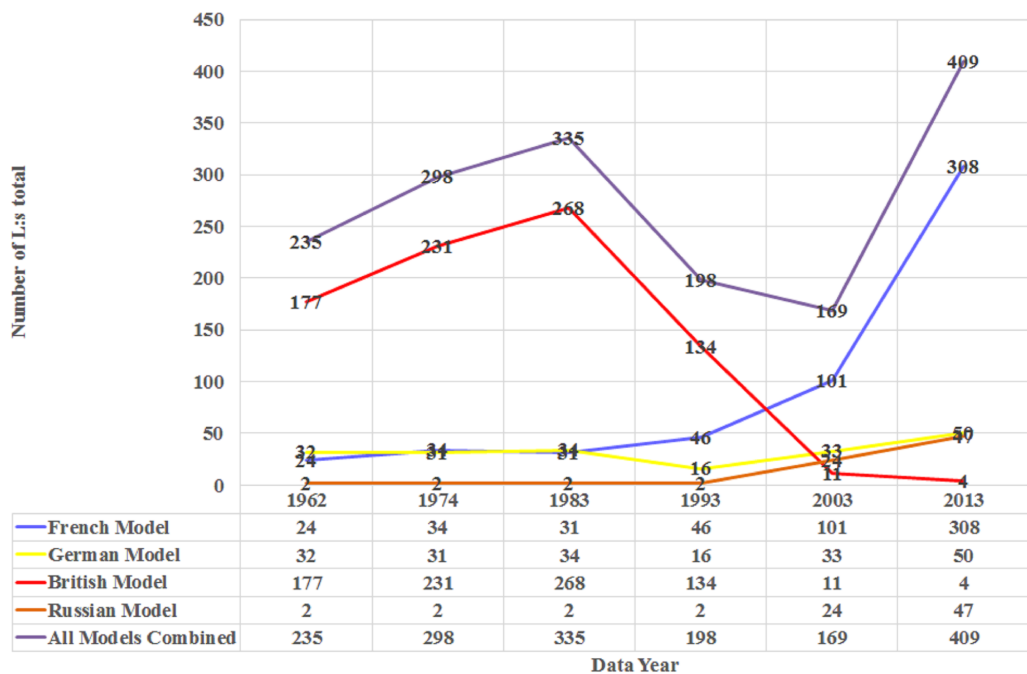


Figure 33. Laboratories (L) in the data per their HES model affiliation.

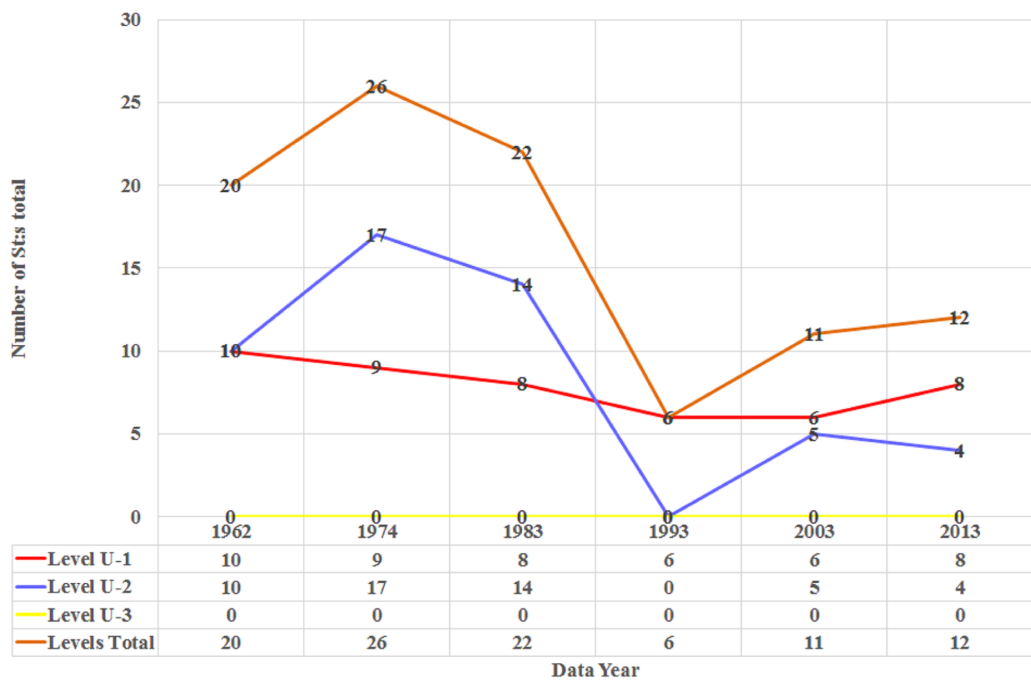


Figure 34. Stations (St) in the data per their organisational level (U-1, U-2 and U-3) location.

Stations (St) in the data represent 17 approximate disciplines or their combinations. They usually operate only in the fields of natural sciences, agriculture, biology, forestry and various geo-sciences, and as a rule are physically located outside the universities' campuses and other major establishments, because the nature of their research, measuring or other activities is such that it would not be possible to carry it out within the normal operational environment of the universities' other units. The stations' (St) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 34 and 35.

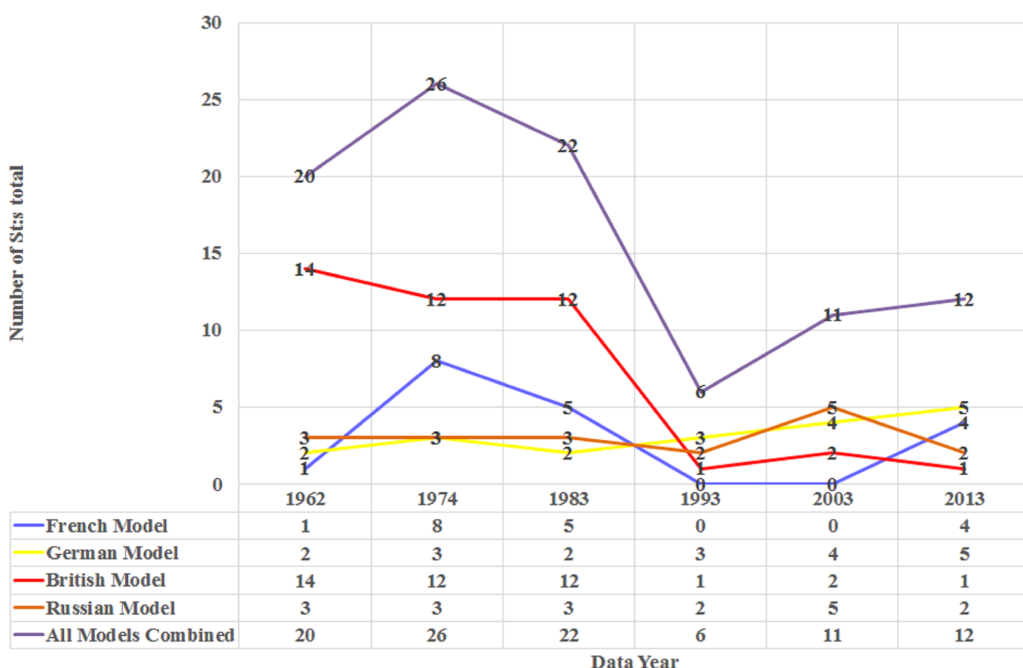


Figure 35. Stations (St) in the data per their HES model affiliation.

Figure 34 demonstrates that the combined number of stations (St) in the data is not large. All have operated either at the U-1 level under the supervision of the 'whole' university (U), or alternatively at the U-2 level under some unit belonging to the main structure. No stations exist in the data at level U-3. After an initial period of organic growth between 1983 and 1993, as with the laboratories (L) before, nearly all of the U-2 level independent-unit-type stations were either shut down or operationally merged to become parts of other types of (mostly larger) units operating in the same disciplines as the stations had done. It is easy to understand that any totally 'remote' and as such, independent units, are on average much more expensive for the university to maintain than their normal units, and thus the station unit category has always been especially vulnerable to economic hardship. This also explains the fact that

even though the universities in the data have had many more ‘stations’ than are visible in the data, a clear majority of them never attained the status of an independent station (St) as a unit of formal organisation. However, totally new stations have been founded or reformed from other units since the 1990s. Figure 35 demonstrates that even as their numbers were always relatively few, as a unit category, stations (St) have belonged to all universities regardless of their HES model affiliations, and were most prominent in universities of the British and the French affiliated HESs in the early decades before their abovementioned heavy trials, elimination and mergers to other units between 1983 and 1993.

5.2.6 The Many Faces of Centres and Research Units

Next I have dealt with both the centres (Ce) and the various types of research units belonging to the universities’ professional organisation. These unit category types are mostly joined by the principle of being founded in order to advance the research, cultivation or development of a specific discipline, field or an even narrower subject theme of activity. Unlike all but exceptional research units, the centres can often also be educational units, although this is not normally their primary function, or else they would not be centres in the first place.

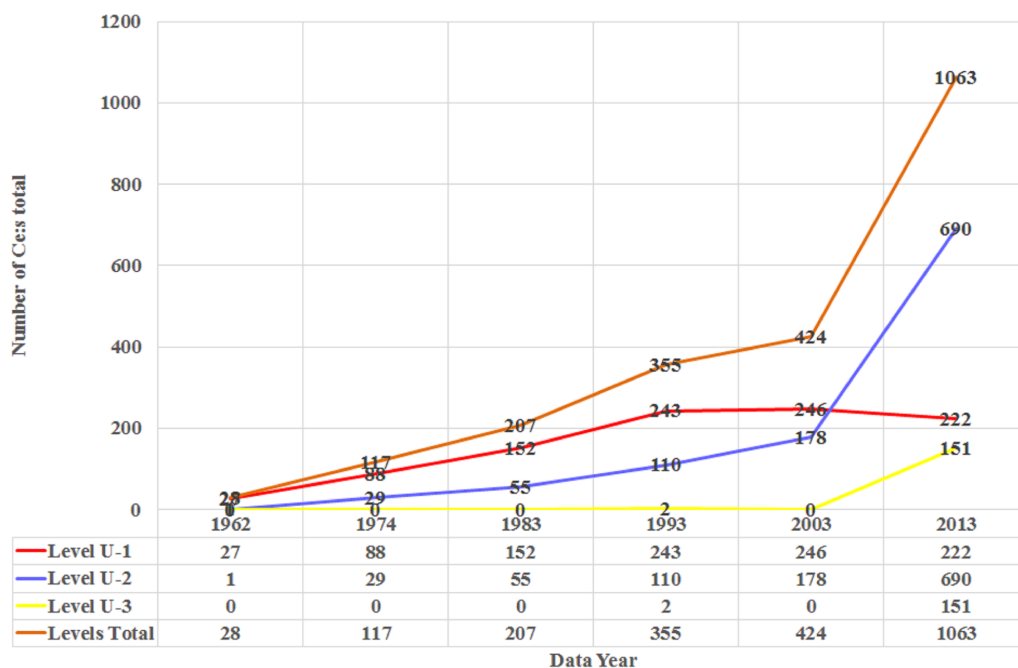


Figure 36. Centres (Ce) in the data per their organisational level (U-1, U-2 and U-3) location.

Centres (Ce) in the data represent 312 approximate disciplines or their combinations. There is no emphasis on particular scientific fields among them, but it must be noted that after departments (D) and institutes (I) this is the most usual unit category type in the data. Centres are also often the favourite choice of unit category type for interdisciplinary subjects or studies aimed at a specific type or level of students (for more about this subject, see 5.2.9). The centres' (Ce) frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 36 and 37.

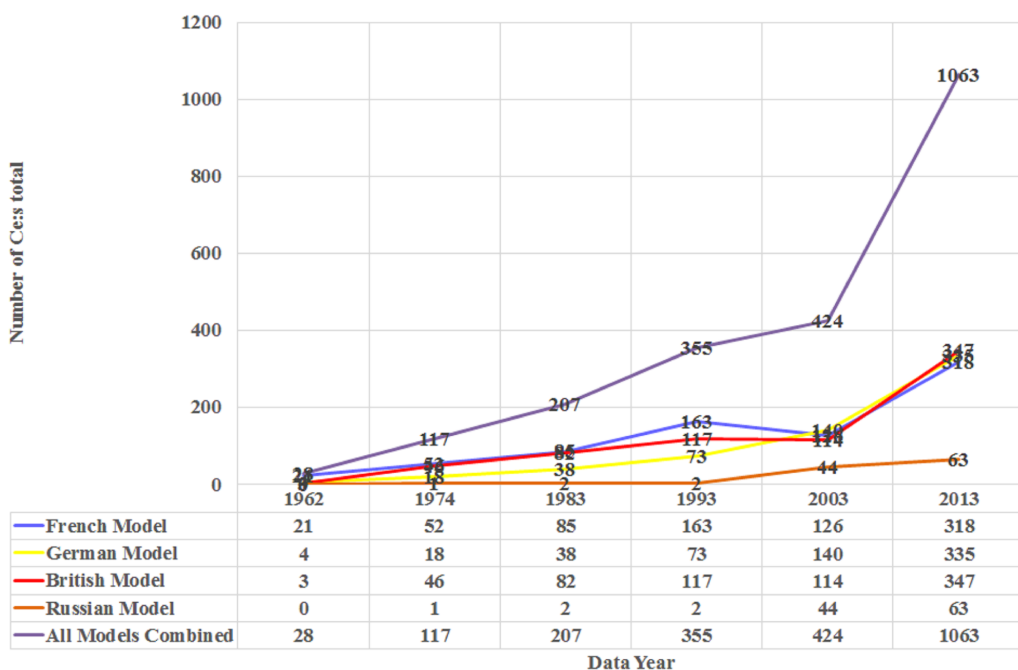


Figure 37. Centres (Ce) in the data per their HES model affiliation.

Figure 36 demonstrates that the total number of centres (Ce) has ascended through the study period. While the number of centres at U-1 level has remained quite balanced and the U-3 level practically had none before 2013, the upsurge of centres from 2003 to 2013 both at the U-2 and U-3 levels is remarkable (as is also visible in Figure 11 in 5.2). It can only be accounted for as a 'side phenomenon' of the more general trend of departmentalisation discussed in 5.2.3 and it does provide evidence to support greater divergence in the organisations of universities structurally, since unlike the 'copied by filiation' -type main structures, the centres with their specific functions are mostly unique for each centre in each university's unique environment. I claim the centres (Ce) as the *ad hoc* unit category *par excellence*: a suitable and fitting addition to any university following any model, any organisational

level, for any function! This good fit of the centres as *ad hoc* units is clearly visible in Figure 37 which, as unit types are compared per their HES model affiliations, has more balanced lines and development per the HES models than in any other diagram in this research. Also, even though the slower organisational growth of the Russian HES model affiliated universities ‘lags behind’ the other models, in Figure 37, the trend of balanced and stable growth in the number of centres is clearer than ever.

Because of terminology, out of all the organisation unit categories, centres (Ce) along with maybe departments (D), units (Ut), sections (Sec), divisions (Div) and sectors (Sr) are in most danger of being mixed up with the universities’ administrative units, which though they do not belong to the professional organisation in the first place, can often still have similar names with even precisely the same word stems, including ‘financial department’, ‘real estate division’ or ‘communications unit’. Also in the data there are a small number of examples, in which organisational units have moved from the professional to the administrative organisation, or in Mintzbergian terms, from the operating core to support staff. This rare occurrence is possible with academic disciplines that study phenomena which can also become useful services for the university’s students and staff, namely computer science vs. IT services, library science vs. library services, as well as physical education and/or sport sciences vs. sport services. But it has happened several times, and it has almost always begun from a centre (Ce). For example, computer science is a discipline that was born and has since evolved only during my 50-year study period of universities. At seven universities, computer science gets started with a computing, calculus or data processing centre in the 1960s or 1970s, which some decades later either moved to a central service of the university for students and/or researchers and other staff to use, or was divided into other units in research and service functions. All such examples belong either to the German or the British HES model affiliated universities.

Regardless of their precise name terminology, in most respects the several kinds of research unit categories in the data are quite similar to one another. Therefore I have handled them all as one unified group. In detail they are research institutes (RI), research units (RU), research departments (RD) and research centres (RCe). In the data, research institutes represent 124 approximate disciplines or their combinations, research units 23, research departments 18, and research centres 40. There is no emphasis of particular scientific fields among any of these unit categories. The research units’ (RI, RU, RD and RCe) combined frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 38 and 39.

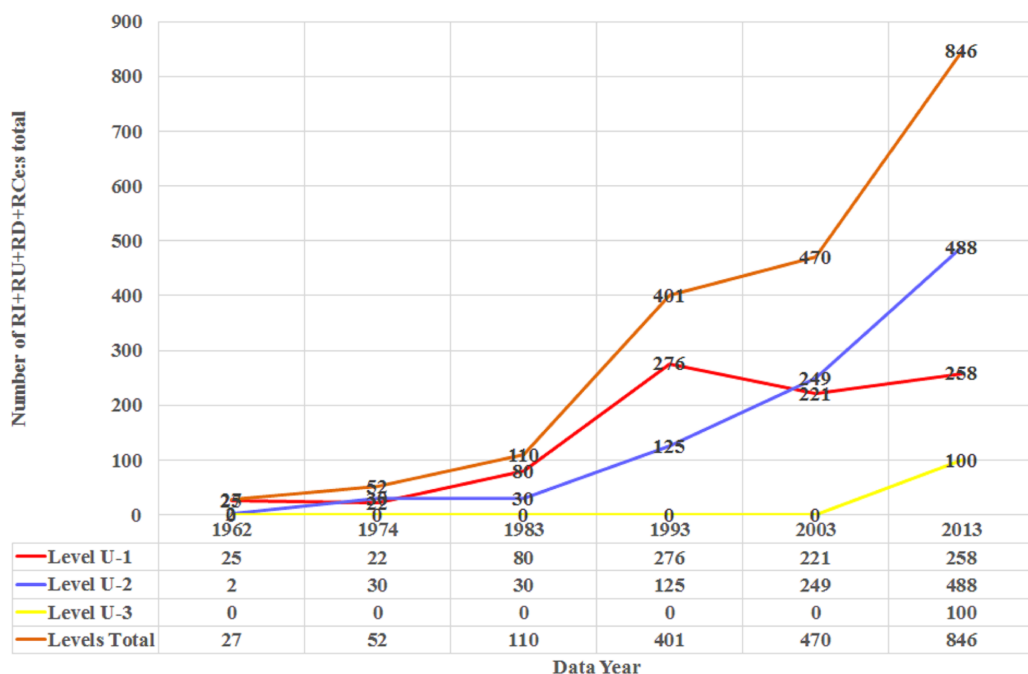


Figure 38. Research Institutes, Research Units, Research Departments and Research Centres (RI, RU, RD and RCe combined) in the data per their organisational level (U-1, U-2 and U-3) location.

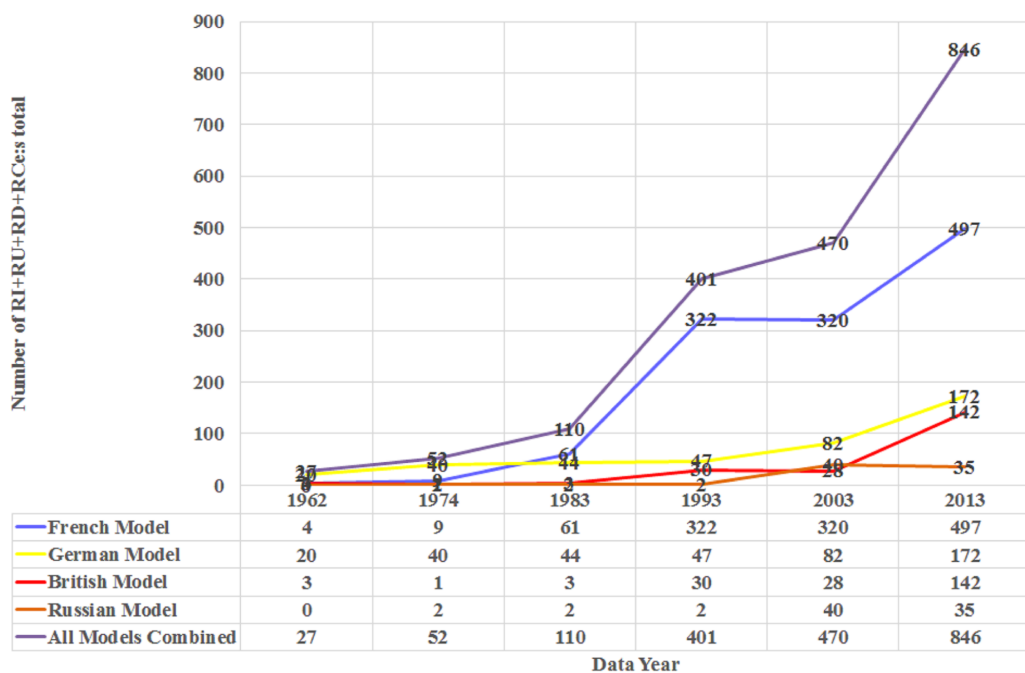


Figure 39. Research Institutes, Research Units, Research Departments and Research Centres (RI, RU, RD and RCe combined) in the data per their HES model affiliation.

Figure 38 demonstrates that the combined number of research unit categories is continuously ascending through the study period and as such resembles the development of the centres (Ce), schools (S) and departments (D) with rapid growth taking place in the latter half of the study period. The research units exist at organisation levels, even as the number of U-2 level units surpasses the number of U-1 level units in 2003 and at the same time, also the number of units at the U-3 level starts to increase. In the data, the U-1 level research units exist either as isolated singles or in small groups alongside the main structure units, at the U-2 level as isolated or on average in larger groups, and at the U-3 level on average in even larger groups. Figure 39 demonstrates that the number of research units of the French HES model affiliated universities since 1993 ascends more rapidly than all other, steadily growing HES model affiliated universities, even combined! However, considering the nature of these units, this is well in line with the development of newer laboratories (L) in French universities, with their joint organisation with the CNRS and other national research organisations and infrastructures (see 5.2.5 for details).

5.2.7 The 21st Century ‘Levels Above’: Sectors, Divisions, Groups, Areas and Campuses

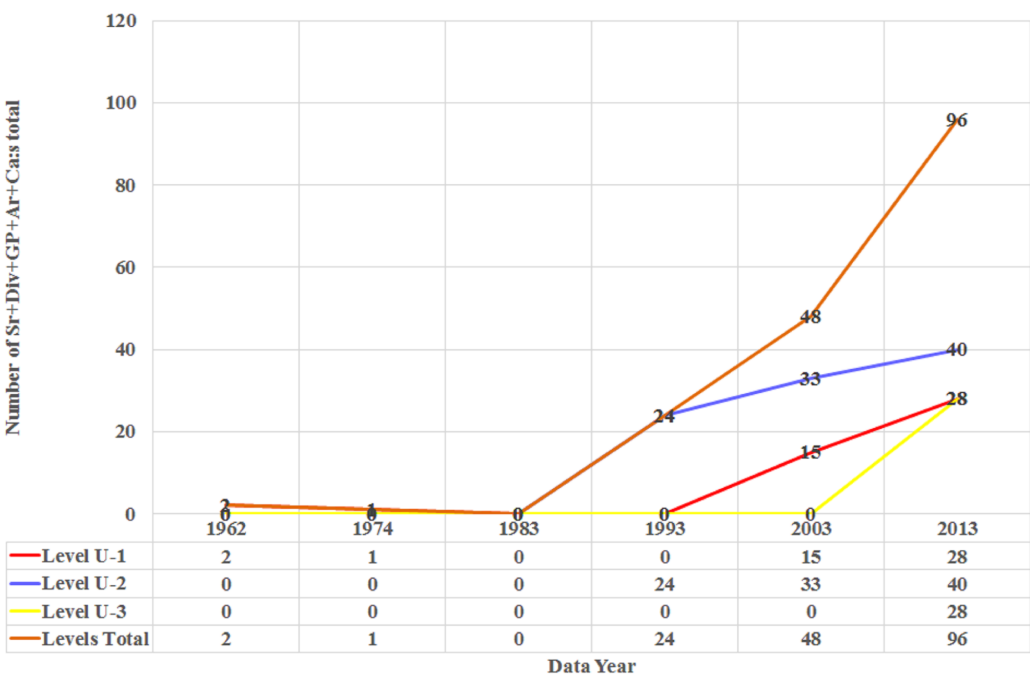


Figure 40. Sectors, Divisions, Groups, Areas and Campuses (Sr, Div, GP, Ar and Ca combined) in the data per their organisational level (U-1, U-2 and U-3) location.

Sectors (Sr) in the data represent eight, divisions (Div) nine, groups (GP) four and areas (Ar) three

approximate discipline combinations that are thematically wide, as they all have a primary function to unite a much larger group of disciplines to just a few ‘ensembles’. Examples of these wide ensembles include ‘humanities and social sciences’, ‘(bio)medical sciences’, ‘natural sciences’ and ‘engineering and technology’. Campuses (Ca) in the data do not represent specific disciplines, since they are normally not named like that at all, but according to their geographical location or another proper noun instead. These units’ (Sr, Div, GP, Ar and Ca) combined frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 40 and 41. Figure 40 demonstrates that as soon as they start to emerge properly, the number of these ‘levels above’ units is constantly increasing regardless of their level placement, which for U-1 level begins in 2003, for U-2 level in 1993 and for U-3 not until 2013. Figure 41 demonstrates the same thing for the HES models: The German HES model affiliated universities’ unit numbers begin from 1993 and declined slightly in number after 2003, while the other three HES model affiliated universities’ unit numbers start from 2003 and have been increasing ever since, with the British HES model affiliated universities’ unit numbers raising the most rapidly.

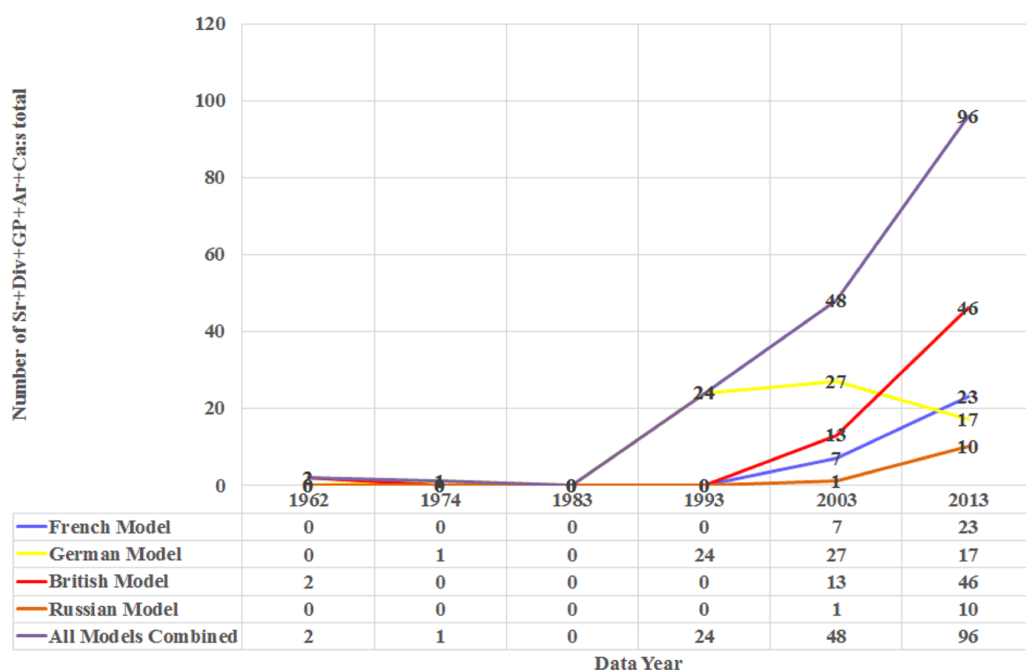


Figure 41. Sectors, Divisions, Groups, Areas and Campuses (Sr, Div, GP, Ar and Ca combined) in the data per their HES model affiliation.

As discussed in 5.2.2 in connection with the faculties’ (F) movements between the organisational levels

of universities, in the last two decades of the study period, *a new type of 'levels above' units have emerged in many universities, which means that the old U-1 level main structure has moved down to the U-2 level, while the new 'levels above' units make up the new main structure.* Even as some sectors (Sr), divisions (Div), groups (GP), areas (Ar) and campuses (Ca) have also existed in small numbers in the organisations of their universities in previous decades – with some other function for their professional organisation – in the data it is clear that these new unit category types mostly emerged just during the 21st century. It is these unit category types as well as some of the more traditional ones like schools (S), departments (D) and colleges (C) that have been used in re-building the new main structures at the U-1 level in order to make them more manageable and efficient. Even if there is no proof that this type of reform will produce the desired effects, it can be interpreted as a contingent factor attributed to the universities' power relationships or new qualities of their environment, inducing change in organisational structures as contemporary responses to the commodification of higher education and similar global pressures, the reduced levels of public funding and the introduction of 'external' members to the universities' governance and strategic apices, also bringing along into universities transplanted organisational models from non-HEI-organisations. These new structural forms can also be interpreted as a contingent way for the new external power elements in the strategic apices of universities to promote interdisciplinarity and international influences in universities as well as to counteract the traditional and predominant age-old academic units' innate ability to resist all forms of change.

There are 14 universities in my data – that is about one in eight – that have gone through this 'levels above' reform in the 21st century, and one that went through a similar reform in the 1980s, although probably based on quite different reasoning. Out of these reforms, six represent German HES model affiliated universities with divisions (Div), schools (S) and departments (D) as the 'levels above' units, five French HES model affiliated universities with sectors (Sr), groups (GP) and departments (D) as the 'levels above' units, and four British HES model affiliated universities with divisions (Div), campuses (Ca), schools (S) and colleges (C) as the 'levels above' units. Area (Ar) is not used in quite this way at the U-1 level, but it is still included in this category, because it is almost always functionally used as a similar 'regrouping' unit category at the lower levels U-2 and U-3, even as this does not move entire organisational levels around.

The 'levels above' reform in detail is carried out as follows: the 'levels above' units are placed above existing units at the 'highest' organisation level that has multiple units, which is U-1. This can be done either so that the system and the new units are constructed out of existing organisations through a genuine reform, so that the new units have staff and funding, buildings etc.; or in another way leading to a 'lighter organisation', one in which the new unit categories are just 'labels' for the 'regrouping' of

old content. The example of *Katholieke Universiteit Leuven* (the Catholic University of Louvain (Dutch)) presented in 5.2.2 was of the first type. Another Catholic university, *Université Catholique de Lyon* (the Catholic University of Lyons) presents a rarer example of this first type of reform, where all but the five faculties (5F) of the main structure U-1 level units are being moved down to the U-2 level as the main structure's subunits, but entirely without the addition of any regrouping unit categories, even as the number of the organisational levels at the same time increases. This is presented as Notation case 6 of Appendix 4. To give a more complex example from the second type, at the University of Cambridge this 'regrouping only' version was carried out between 2003 and 2013 with six schools (S) used as the 'levels above' units so that the faculty (F)-structure was moved from the U-1 level to the U-2 level and the departmental (D)-structure below it from level U-2 to level U-3 simultaneously, while at the same time the coexisting collegiate (C)-structure remained at the U-1 level. However, the new schools constitute an administrative grouping, so strictly they are not actual units of formal organisation at all, but more like labels per which the large number of existing faculties, their parallel and subunits can be regrouped into just six groups based on their 'upper level' disciplines. This is presented as Notation case 7 of Appendix 4. As in this example, when both the U-1 and U-2 levels were shifted one level down, it is basically possible to do the same 'levels above' operation also at level U-2 only, which then moves its units to the U-3 level. However, there are no examples in the data of exactly such an operation without the U-1 level also being subjected to the same operation simultaneously.

5.2.8 The Extras: The Uncommon Unit Category Types and Beyond

After the more usual unit types in the data have been handled, there are still nine less common formal organisation unit category types left (for details, see Appendix 3), as well as the many units that by Mintzbergian definitions, clearly belong to the professional organisation of universities, even as these have not been coded with a standard method like the other units. I now present most of them. The uncommon units and all non-standard extra unit categories' combined frequency distribution and their temporal development per their organisational level location and per their HES model affiliation are presented in Figures 42 and 43. Figure 42 demonstrates that an overwhelming majority of the uncommon and extra units have been located at the U-1 level during the entire study period, a clear minority at the U-2 level and only some sporadic units at the U-3 level. This makes sense, as unique units in the professional organisations are mostly thought of as being the university's joint or common thing, and as a result, most such units are located at the U-1 level. Figure 43 demonstrates that the British HES model affiliated universities have had more uncommon and extra units when compared to the other three HES models, which still have had some such units in their professional organisations throughout the 50-year study period.

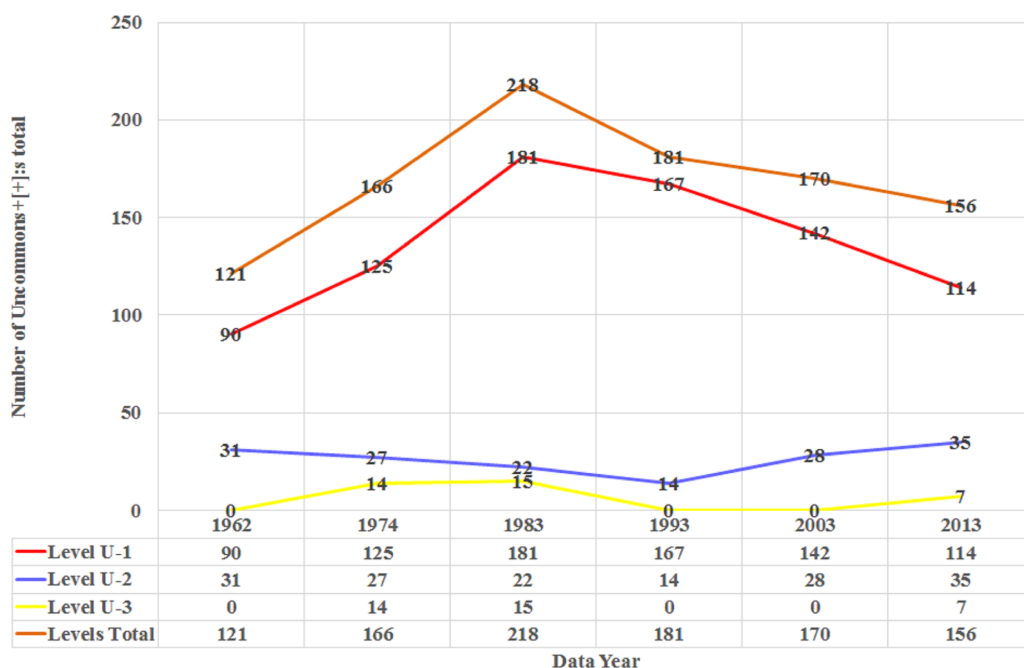


Figure 42. The Uncommon and All Non-standard Extra Unit Categories (combined) in the data per their organisational level (U-1, U-2 and U-3) location.

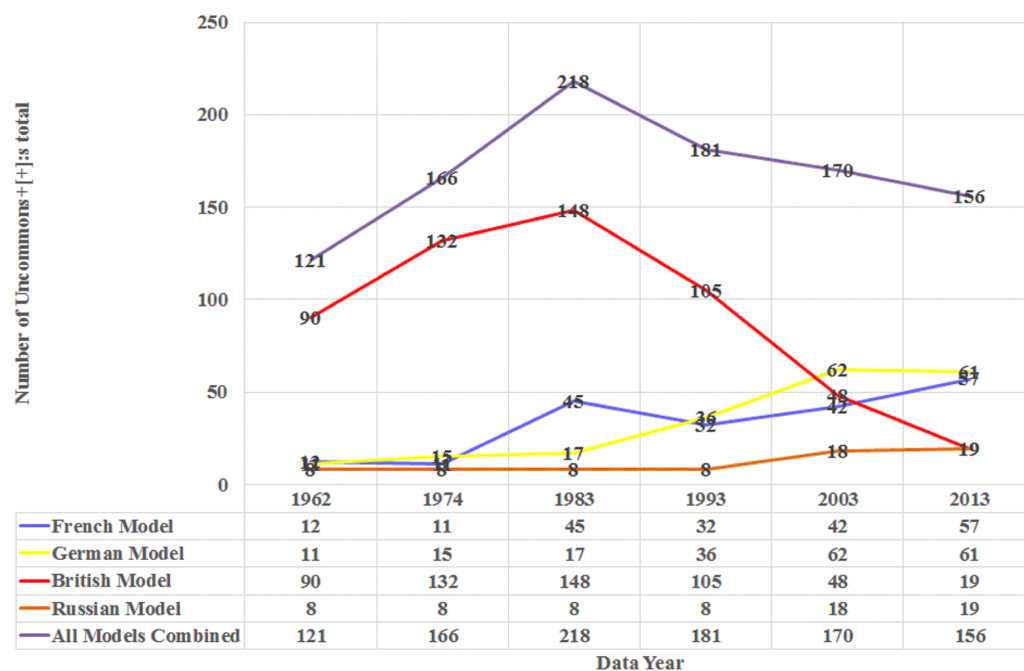


Figure 43. The Uncommon and All Non-standard Extra Unit Categories (combined) in the data per their HES model affiliation.

Starting with the less common unit category types not yet handled, a few universities in the data have individual conservatories (Co) that always belong to and operate in the discipline of music, sometimes combined with dance and/or theatre. In addition, several unit types also exist in the contexts of many universities, for example a range of ‘program(me)s’ (P), but which are exceedingly uncommon as units of formal organisation and therefore hardly found in the data. Thus, in most universities there are normally also at least some of the following: research groups, federations, foundations or societies, which however are not the formal units program (P), research group (RGp), federation (Fe), foundation (Fo) and society (Soc) of the professional organisation and as such are not counted in the data either. That still leaves a few rare unit categories to be mentioned: core facilities (CF), research colleges (RC) and research laboratories (RL).

Some of the more common extra unit category types include observatories, gardens as well as the many kinds of university hospitals. It is surprising to find how many classical European universities have both an astronomical observatory as well as a large and lush botanical garden often right in the middle of their native cities. Fewer have also had military training corps, air squadrons or other types of university military formations, types of affiliate branches or venues not fitting into any unit categories so far, experimental farms or herbariums that don’t quite fit the station (St) or laboratory (L) category, polytechnics and practice high schools that don’t fit the strictest school (S) category either, research companies or a ‘house of science’. The various university hospitals are a particularly difficult unit type to categorise and demarcate as belonging or not belonging to a university, since they can be organised in at least four different ways. Firstly, they can be organised as hospital organisations, totally owned and run by the university; secondly, through the universities’ own units (for example as departments (D) of external clinics) belonging and operating within a larger organisation of a hospital otherwise of a non-university-type; thirdly, in ‘affiliated’ university hospitals with the university’s academic staff but without any share of the hospitals organisation as such; fourthly, as agreed contract activity in a totally non-university-type hospital. In the third and fourth cases the question of ‘how many clinics does it take to make ‘a’ hospital?’ becomes relevant, since clinics (Cl) can also be organised in various ways to one or more ‘hospitals’, regardless of operational size as such. In this question I have mostly counted the arrangements as being one hospital per university, except in the clearer cases of the first and second category, or if their number is otherwise clearly stated in the data as being more than just one.

It is also worth mentioning that the various kinds of museums, planetariums, studios, theatres, exhibition, conference and concert halls, sport halls and stadiums and *Cités Universitaires* etc. many universities have as additional units are not counted as units of the professional organisation for any university, even as some of them would be borderline with the definition of directly contributing to research and/or

education. But since it would have been impossible to know and demarcate precisely which meet this criterion and which not, I have chosen not to include any of them.

5.2.9 General Findings on the Attributes of the Organisation Units in the Data

As described in 5.1.2, in the data a minority of the organisational units of universities have also extra specialisation attributes that further augment and demarcate their character as units. The categories of these attributes are listed in Appendix 3. I will present an overview of these categories and the units they concern. Firstly, as mentioned in 5.2.6, some units can be aimed only at a specific type or level of students. In the data the attributes for the level of students include the following: preparatory (pre-university studies), undergraduate (1st EHEA degree cycle), graduate (2nd cycle), postgraduate (3rd cycle) or doctoral, vocational, refresher or post-degree. All of these levels of student-specific attributes are found from all HES models' affiliated universities, although they are most common in the French HES model. The specific cycle-attributes, however, are found only from universities that are also located in France, with the single exception of *Užhorod'kyj Nacional'nij Universitet* (the Uzhhorod National University) in Ukraine. Also, even though found in all the HES models, it is a particularly French HES affiliated phenomenon to augment the name of some of the academic units with a qualitative epithet of a superior quality status, such as 'higher', 'advanced' or 'professional', even though there is often no clear explanation of what that epithet actually denotes or why it has been added to the name.

Secondly, some units can aim only at a specific type of students. In the data, these include the following: for foreigners only, for a specific language-group only, for men only, for women only, for the handicapped or disabled only, for the most talented students only, for workers and peasants only, or for religious-oriented (confessional, as opposed to secular theological) students only. Most of these attribute categories are quite uncommon, found at no more than two or three individual universities (with no emphasis among the HES models), with the notable and more common exception of units aimed at foreign students or specific language-group students only, which are mostly used in the language and academic preparation of foreign students. This is done mainly for students entering a university operating in a native language other than English, to accommodate and integrate these students within the normal curriculum of the university. The other specific language-group units are often used in countries with more than one official language, to make sure that in education, at least adequate quotas in all of the required languages are being met.

Thirdly, depending on the circumstances, some units have attributes that might denote both the type and/or level of students. These include the following: open, adult, popular, continuing, further or lifelong

education; external or extra-mural education; (long) distance, correspondence or tele-education; and evening courses or studies. These attribute categories are quite common, and in the data, they are found at over twenty universities with no emphasis among the HES models. However, it must be noted that in the early decades of the study period, especially in the Russian and other Soviet-influenced HES model affiliated universities (as mentioned in 5.2.2), there was often at least one organisation unit of this type, as universities affiliated with the Soviet-influenced HES models were progressive and ahead of their time in early applications of open, correspondence and distance education.

Fourthly, some units have attributes that denote the level or scope of their activity. These have no emphasis among the HES models, and they include the following (from the 'lowest' level upward to the 'highest'): interdisciplinary or multi-disciplinary, inter-faculty, university or inter-university; regional or local; national, royal, pontifical, federal, imperial; European-level or EU-affiliated; and international, world-level, global or UNESCO-affiliated. Probably it will not come as a surprise that the level or scope of a unit is roughly inversely proportional to its prevalence: plenty of universities in the data have various 'inter'-units, many have local or regional units, some have national and equivalent level units, and even fewer have truly international-level units.

Fifthly and finally, some units have attributes that denote the special function of their activity. These have no emphasis among the HES models and they include the following: affiliate, associate or remote (located in a city or town different from its parent university or HEI); shared or joint (unit shared together with another university or HEI, and thus belonging to a more than one professional organisation simultaneously); and umbrella (a regrouping category of existing organisation units instead of an actual unit itself). Out of these, *the affiliate units are the most common of all special attribute units, and almost half of all universities have at least one at some point of the study period*. They also represent a most important means for universities to procreate through partial divisions as later, through reforms, the affiliate units of older universities become the basic U-1 level organisational structure of newer universities (see 5.4.2 for reference). These affiliate units are often also born so that a university can produce an affiliate unit in a discipline in which it already has a strong normal unit in operation. For example, *İstanbul Üniversitesi* (the University of Istanbul) in 1962 had a strong faculty (F) of medicine in Istanbul, and by 1974 it has started an affiliate faculty (F*A) of medicine in Cerrahpaşa. Though far less common, this can also be arranged on the basis of a single organisational unit operating in more than one location, as is the case with *Università cattolica del Sacro Cuore* (the Catholic University of the Sacred Heart (Milan)), which since 1983 had a faculty (F) of teacher training that operates about fifty-fifty both in Milan and in Brescia simultaneously, and is thus only a partly affiliated unit. On the other hand, shared or joint units belonging to two or more universities simultaneously – or to two or more

subunits inside a university’s professional organisation units – are rare, and only a handful of universities have them. Also, equally unique in the data is the case of *Université d’Aix-Marseille* (the University of Aix-Marseilles), which until 1970 existed in both the cities of Aix and Marseilles, so that its units were divided pretty evenly between the two close cities, even as none of them is thus to be categorised as properly ‘affiliated’. Finally, the regrouping umbrella unit attribute is mostly used with the ‘levels above’ units described in 5.2.7 and has only existed in the latter decades of my fifty-year study period.

5.3 Findings on the HES Models and Their National University Model Adaptations

After analysing the research data extensively at the level of units of the professional organisation of universities and their general features, I will now move on to analyse the data from a more collective level of the HES models (as historical adaptations of the national university models) and their national 20th century HES adaptations, with which the universities of the data are affiliated, as described in the fourth main chapter and capsulized in Figure 9, the schematic historical family-tree of European university models at the end of 4.6. The comparison of the data per the different HES models and their national university model adaptations brings about important collective distinctions and findings. The total frequency distribution of units belonging to the universities’ professional organisation and their temporal development is presented per their HES model affiliation in Figure 44.

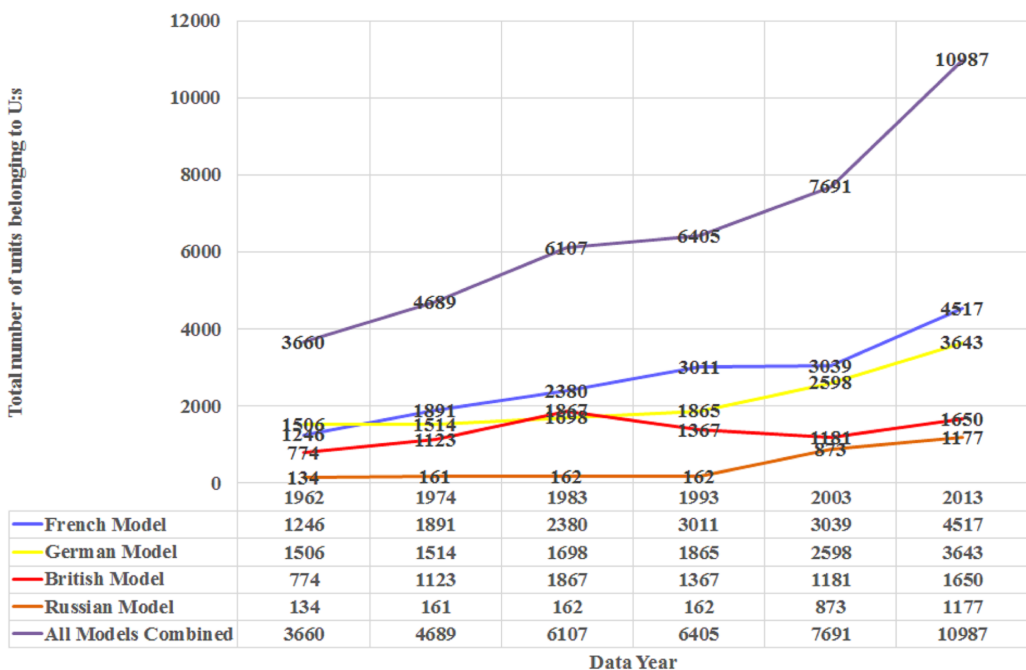


Figure 44. The total number of university units in the data per their HES model affiliation.

Figure 44 demonstrates that within the continuous and rapid overall expansion of the units of the universities' professional organisation during the fifty-year study period, *the development between the affiliated follower groups of the four HES models has been generally balanced*, even if small deviations from the general trends exist. These are the decrease in the number of units in the British HES model affiliated universities from 1983 to 2003, and the relative stagnation in the number of units in the Russian HES model affiliated universities from 1974 to 1993. As discussed in 5.1.1, 5.2.3 and 5.2.5, the first is probably due to the British HES policy of actively creating additional units at HEIs, instead of new HEIs, to channel growth pressures until the 1980s and the economics and NPM-affiliated intentional confinement and suppression of units during the two decades since. Likewise, the second is probably due to the political and financial stagnation of the Soviet-influenced HESs that were not allowed or able to develop in the last two decades of the Soviet Union.

5.3.1 HES Model Findings on the Units' Organisational Level Locations

It is also prudent to look at the organisational level location of the university units per their affiliated HES models. The frequency distribution of units belonging to the universities' professional organisation per their organisational levels location and their temporal development per their HES model affiliation are presented in Figures 45, 46 and 47.

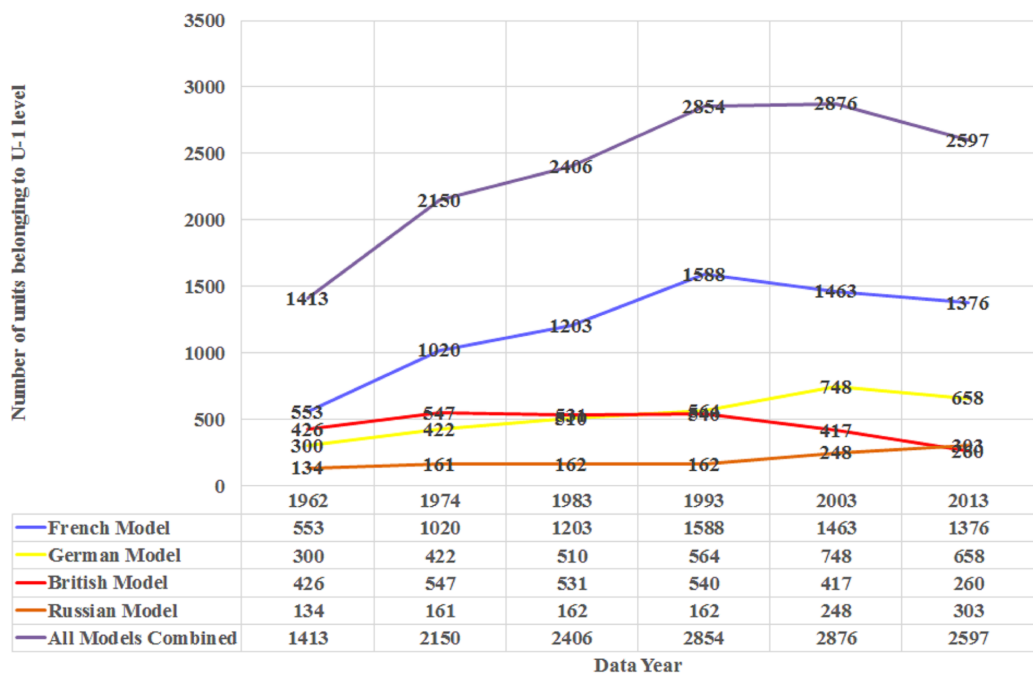


Figure 45. The university units at level U-1 in the data per their HES model affiliation.

Figure 45 demonstrates that the number of units at the U-1 level has more or less increased throughout the study period in all universities regardless of their HES model, except in the French and British HES model affiliated universities since 1993, and the German HES model affiliated universities since 2003. Their combined effect also tipped the total number of units at the U-1 level into decline after 2003. This means that, even as the total number of the universities' organisation units has continued to increase in the later decades of the study period, and even more rapidly so at levels U-2 and U-3 (see Figures 46 and 47), this is not the case with the main structures at the U-1 level. Instead, the many 'levels above' type of reforms have caused those main structures to be moved down to level U-2 and be replaced with new main structures at the U-1 level based on different types of units, yet ones which usually represent a clearly smaller number – because of their regrouping function – than the ones being moved below. This phenomenon explains a large part of the 21st century decrease in the total number of units at the U-1 level. Another finding from Figure 45 is that the French HES model affiliated universities seem constantly to have in absolute numbers more units at U-1 level than the universities affiliated with the other HES models. However, this is mostly explained by the large expansion of university organisations in the French HES model in the 1960s and 1970s through the divisions of existing universities into several parts, each then becoming independent universities (as elaborated in 5.1.1), which also increased their absolute number inside the data sample by about one quarter. Still, when compared with Figures 46 and 47, it is no exaggeration to claim that *the French HES model affiliated universities are more 'U-1 level heavy' than the universities affiliated with the other HES models.*

Figure 46 demonstrates that the unit development at the U-2 level has been more balanced regardless of the HES model, with the exception of the Russian HES model affiliated universities not having any U-2 level units before 2003, which can be explained by the simple and straightforward organisation of the Soviet HES model affiliated universities (see 5.3.5) and the period of stagnation discouraging their further development before the decline of Soviet HESs (as discussed in 5.2.3 and 5.3). In Figure 46, the strong 'departmentalisation' trend of the 21st century can also be observed, regardless of the HES model.

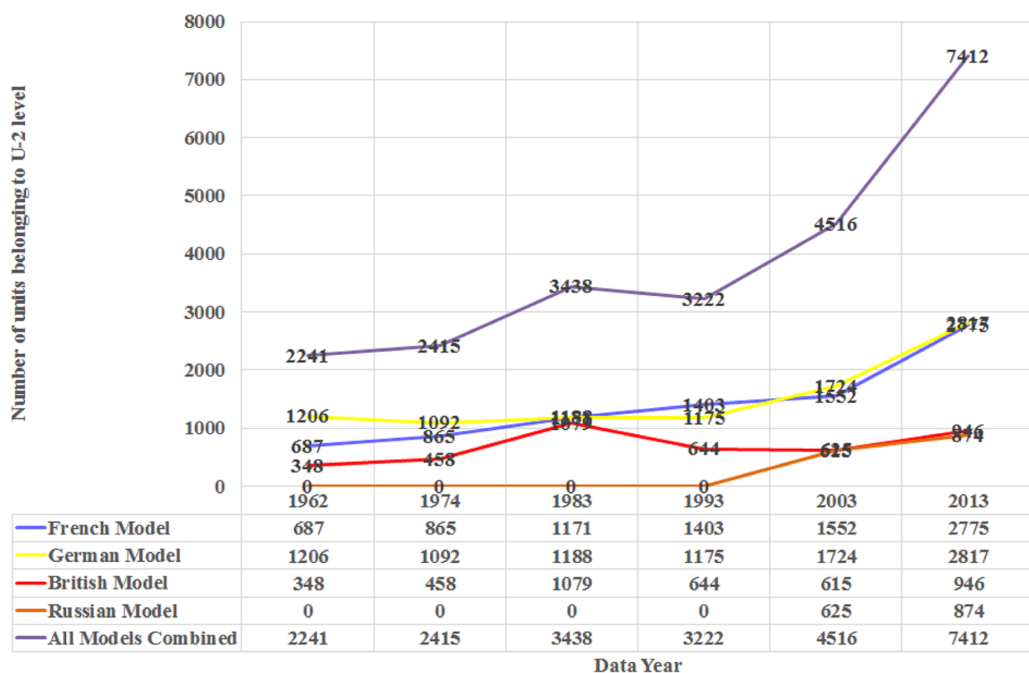


Figure 46. The university units at level U-2 in the data per their HES model affiliation.

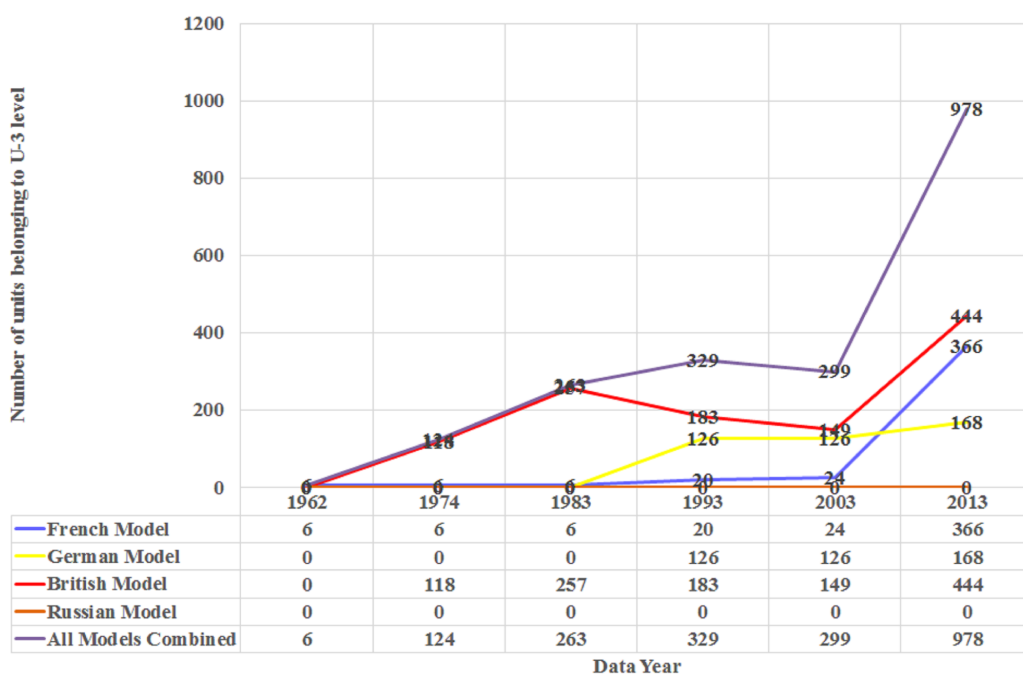


Figure 47. The university units at level U-3 in the data per their HES model affiliation.

Figure 47 demonstrates that the U-3 level units as such are a later phenomenon in the French and German HES models than in the British one, and through the study period, nonexistent in the Russian one. The departmentalisation and ‘levels above’ reform trends are also clearly visible after 2003. Compared with the numerous university units at the U-1 and U-2 levels, the immediate observation that there are a lot fewer of these level U-3 units might feel counterintuitive. However, this is explained mostly by the fact that the level U-3 units can only even exist only in universities with four levels in their organisational academic hierarchy. Even in the latest data year of 2013, only about 10% of the most differentiated universities in the data have as many as four levels (see Figure 57 in 5.5.2).

5.3.2 Universities in HESs Based on the French HES Model

The frequency distribution of units belonging to the universities’ professional organisation per their organisational levels location and per their unit types in the French HES model affiliated universities as well as their temporal development are presented in Figures 48 and 49.

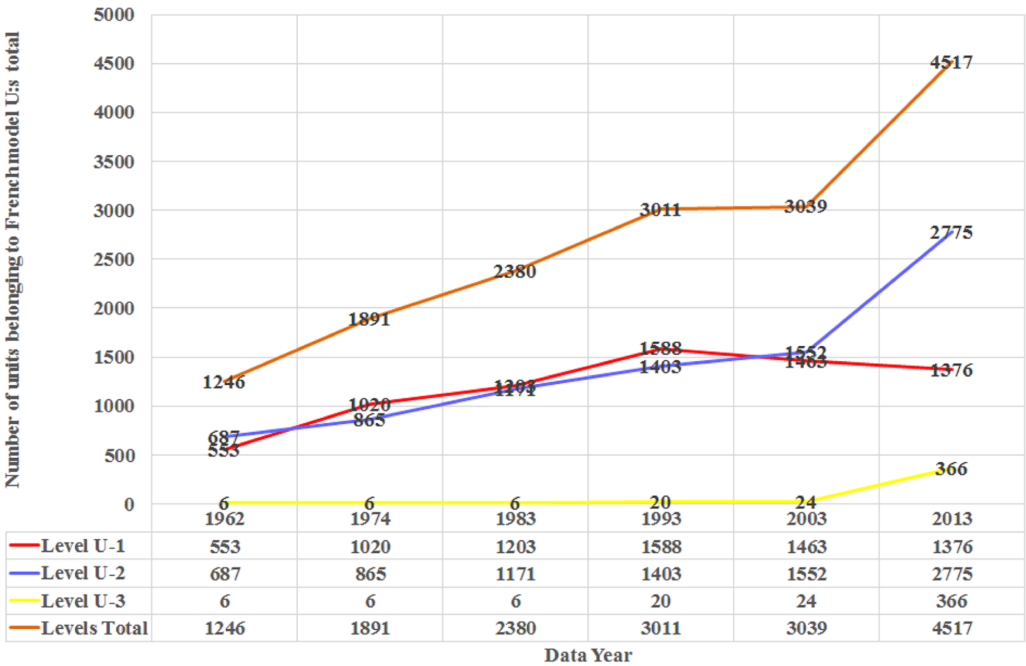
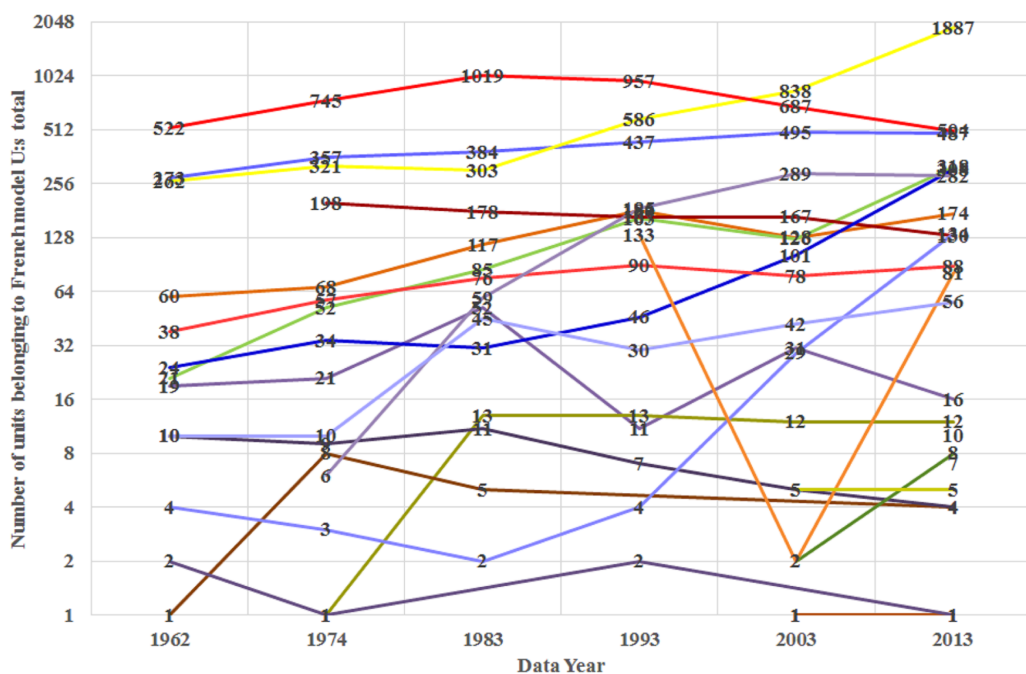


Figure 48. The French HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location.



D	262	321	303	586	838	1887
I	522	745	1019	957	687	504
S	60	68	117	180	128	174
C	19	21	52	11	31	16
Ce	21	52	85	163	126	318
Ut	0	198	178	167	167	130
L	24	34	31	46	101	308
A	0	1	13	13	12	12
St	1	8	5	0	0	4
Sem	10	9	11	7	5	4
Sec	0	0	0	0	2	8
Cl	38	57	76	90	78	88
RI	4	3	2	4	29	134
RD	0	0	0	0	0	0
RU	0	0	0	133	2	81
RCe	0	6	59	185	289	282
Sr	0	0	0	0	0	10
Div	0	0	0	0	1	0
GP	0	0	0	0	0	7
Ar	0	0	0	0	5	5
Ca	0	0	0	0	1	1
Fo	2	1	0	2	0	1
Soc	0	0	0	0	0	0
Co	0	0	0	0	0	0
[+]	10	10	45	30	42	56

Figure 49. The French HES model affiliated universities in the data per unit types (shown in logarithmic scale for improved readability; the legend of unit category abbreviations is found in Appendix 3).

Figure 48 demonstrates clearly the already noted 'U-1 level heavy' character of the French HES model affiliated universities, where the number of U-1 level units even exceeds those of U-2 level units between 1974 and 1993, unlike in any of the other HES models. Also, the departmentalisation and 'levels above' reform trends have been visible particularly since 2003. Figure 49 demonstrates the growing departmentalisation trend since 1983 and its extreme acceleration since 2003, so that even the sturdy

number of the institutes (I) at the same time finally starts to decrease. In part this also shows that many institutes (I) have been converted or redesignated as departments (D) because of a change in their organisational levels location or function, or as a result of the modernisation of terminology. Another observation from the figure is the rise of the training and research (UFR) units (Ut) from 1962 to 1974 – due to the French national reform of 1968 – and their slow but steady decreasing number ever since. Also, the centres (Ce), research centres (RCe) and laboratories (L) seem to become more populous in the last two decades of the study period.

France (F)

The French university model (F) is represented in the data by seven universities, namely (as in 1962) *Université de Paris* (the University of Paris), *Université d'Aix-Marseille* (the University of Aix-Marseilles), *Université de Besançon* (the University of Besançon), *Université de Caen* (the University of Caen), *Université de Dijon* (the University of Dijon), *Facultés Catholiques de Lyon* (the Catholic Faculties of Lyons) and *Université de Clermont-Ferrand* (the University of Clermont-Ferrand). These were quite different in both their age and size, but all were state institutions with academic and financial autonomy under the jurisdiction of the Ministry of Education with just the exception of the Catholic Faculties of Lyons, which remained a private institution throughout the 50-year period of study. It is notable that France did not have technical or economics universities at all in the 1960s and really never got them later either, most likely because of the many other special types of HEIs founded, and being a standalone characteristic of the French HES.

The large 1968 French national HES reform (see 4.5.5 for details) aimed to decentralise the national systems of higher education and research. This was accomplished both with the total division of several universities into two or more smaller independent ones, of which three are also represented in the data as described in 5.1.1. In addition, at the core of the national HES reform (see 5.2.4 for details) was the introduction of the *Unités de Formation et de Recherche (UFR)*, the training and research units (Ut) to replace the universities' U-1 level main (F)-structures of faculties with even more numerous (Ut)-structures of units. However, this process was immediate in some places, while in others it took decades. In someplace it was completed quickly, but in others, it was never completed. In someplace it was later reversed and fully undone, while in others it meant a lot of slow and sporadic back and forth movement, of replacing, mixing and returning one organisation unit category with another.

To give an elaborate example of the HES reform's miscellaneous consequences of the universities' organisation level units, I will demonstrate with *Université d'Aix-Marseille* (the University of Aix-

Marseilles). It existed until 1970 in both Aix and in Marseilles, so that its units were divided between these two close cities. Under the 1968 reform law, the university was replaced by two universities in 1970 – I *Université de Provence* (the University of Provence) and II, since 2003 called also the *Université de la Méditerranée* (University of the Mediterranean) – with the existing faculty (F)-structures replaced with a UFR-unit (Ut)-structure, although four faculties (4F) with a new composition also remained at university II. Then in 1973, a third university (III, since 1993 called *Université de Droit, d'Économie et des Sciences* (the University of Law, Economics and Science) and later also *Université Paul-Cézanne* (the Paul Cézanne University)) was divided from the second (II) one. Out of these three, I was located in Marseilles, III in Aix, and II partially in both Aix and Marseilles but mainly in Marseilles. At university I, the unit (Ut)-structure remained in fifteen units (15Ut) without faculties, but by 2003, the number of units had decreased to nine (9Ut). At university II, the faculty (F)-structure held for 40 years with four or five faculties (4F or 5F) with a simultaneous unit (Ut)-structure with the number of units ranging from one to five (1Ut–5Ut). At university III, there were originally no faculties, then three (3F) from 1983 to 1993 and then again none in 2003, while the simultaneous number of units ranged from four to nine (4Ut–9Ut) during the same period. Then finally in 2012, the I, II and III universities were re-merged to form a new, single and unified university, now called *Aix-Marseille Université* (the Aix-Marseilles University). At the same time, it also went through a ‘levels above’ type reform introducing five sectors (5Sr) as the new U-1 main structure, while later a total of seven faculties (7F) and one unit (Ut) were moved down to the U-2 level and four units (4Ut) to the U-3 level. The temporal development of the professional organisations of these one to three universities in Aix-Marseilles, through the entire study period recapping their ‘incoherent’ faculty and unit organisation history, is presented as Notation case 8 of Appendix 4.

As complex as the example of these one to three universities in Aix-Marseilles is, it demonstrates perfectly the recurring organisational complexities of the French universities. Also, the other totally divided universities in the data developed highly complex organisations after 1968. After *Université de Paris* (the University of Paris) had been divided into thirteen independent universities, for decades some units of the professional organisation have been moved every now and then not just inside the new independent universities, but also between them, when units in a certain discipline just seem to disappear from one of these universities and appear at the same time at another, even as certain information on such lateral movements of units is not part of the primary data. Also, some totally new joint units of two or more of the Parisian ‘descendant’ universities were first developed and then later moved so they belonged to just one university. Such movements often operate in a way which concentrates particular disciplines into one instead of several out of the Parisian descendant universities. As a result, coming to the 21st century, the division of disciplines among them has finally created universities with clear scientific profiles: for

instance, *Université Panthéon Assas (Paris II)* (the University Panthéon Assas (Paris II)) operates mostly in law, political and social sciences only; *Université Sorbonne Nouvelle (Paris III)* (the University New Sorbonne (Paris III)) just in languages, philology and linguistics; and *Université René Descartes (Paris V)* (the University René Descartes (Paris V)) in medicine and health-related sciences only. This also coincides with the previously mentioned joint or double structure of units that came to belong both to the universities at the same time as well as the organisation of CNRS and other French national research organisations, as demonstrated clearly by Figure 33 in 5.2.5 and Figure 38 in 5.2.6: especially since 1993, the number of laboratories (L) and of the various research units (RI, RU, RD and RCe) grew strongly only at the French universities.

To summarise, it can be claimed that even as the major 1968 HES reform marked the final end of the obsolete Napoleonic model, it at the same laid the basis for a very fragmented HES where organisation-wise mostly ‘anything goes’: the specificities of the French HES since then have often arisen from a specific need at a specific time, just adding on to the existing system rather than ever rethinking the whole structure of that system. As a result, *the internal organisational structures of the French universities demonstrate the most chaotic patterns and dynamics to be found in the data throughout the study period*. This is visible also in the changing scientific priorities in existing organisation units: the disciplines of the units within French universities are changed or altered on the average more often and more rapidly than those of the units in any of the other university models. This picture becomes even less clear with the quite liberal and incoherent way of naming some units as ‘higher’, ‘advanced’ or ‘professional’ etc. without correspondingly clear official categories, as mentioned in 5.2.9.

Italy, Vatican, Spain and Portugal (Fispv)

The French, Italian/Spanish/Portuguese/Vatican adaptation of the French university model (Fispv) is represented in the data by sixteen universities, namely (as in 1962) *Università degli Studi di Bologna* (the University of Bologna), *Universidad de Salamanca* (the University of Salamanca), *Università degli Studi di Siena* (the University of Siena), *Universidade de Coimbra* (the University of Coimbra), *Università degli Studi di Roma* (the University of Rome), *Universidad de Barcelona* (the University of Barcelona), *Universidad de Santiago de Compostela* (the University of Santiago de Compostela), *Università degli Studi di Macerata* (the University of Macerata), *Pontificia Universitas Gregoriana* (the Pontifical Gregorian University (Rome/Vatican)), *Università degli Studi di Modena* (the University of Modena), *Universidad de La Laguna* (the University of La Laguna), *Università Commerciale Luigi Bocconi* (the Bocconi University (Milan)), *Politecnico di Torino* (the Polytechnic Institute of Turin), *Università Cattolica del Sacro Cuore* (the Catholic University of the Sacred Heart (Milan)), *Universidade Técnica*

de Lisboa (the Technical University of Lisbon) and *Universidad Pontificia de Salamanca* (the Pontifical University of Salamanca). These were all geographically and culturally located in the southwestern Catholic Europe of the Mediterranean (with the University of La Laguna in the Canary Islands off the coast of Africa as an ‘extension’ of Europe), and are also alike in their general organisational forms and governance models, even as their age and size differ. Nearly all of these universities were public state institutions with public funding, with the exceptions of the three private Catholic universities and/or pontifical as well as one commercial (Bocconi University) one. Unlike in the French universities, among these there is one representative of both a technical (the Polytechnic Institute of Turin) and an economics (Bocconi University) universities. A discipline-related peculiarity is that in the Spanish universities in the data where it is represented, history is usually paired with geography in the same faculty (F), department (D) or other unit; this pairing combination of basically one natural science and one human science co-existing as a discipline is not found elsewhere in my data.

In contrast to the French universities, the Italian/Spanish/Portuguese/Vatican adaptation of the French university model has produced universities that usually maintain a stable organisational structure, which has changed little through the five-decade study period. This does not mean that as the universities grow organically, the number of faculties (F), departments (D) and other similar basic units would also not increase, or sometimes decrease, but their unit category types are seldom reformed into something else. Except for a few ‘levels above’ type reforms occurring in the 21st century, even the biggest universities belonging to this model are normally able to maintain their basic U-1 level main structures and stable unit categories at their lower levels. An example of one the largest universities in all of Europe, *Università degli Studi di Roma* / later *Sapienza* – *Università di Roma* (the University of Rome / later University of Rome La Sapienza) illustrates this well: as the university just keeps on growing rapidly with a student population of 48 000 in 1962, 90 000 in 1974 and peaking at 166 300 in 1993 before a moderate decrease to 128 963 in 2013, it has maintained the same basic organisational structure and governance model throughout all of these stark size changes – even as size is an imposing contingency factor to develop new structures – for the entire study period. This is presented as Notation case 9 of Appendix 4. The same development could also be interpreted as stagnation or ineptitude to develop because of other contingent factors. These might include the local political interests in the Italian parliamentary system as an example of the universities’ power relationships, or the Spanish traditional morality values, dogma, authority and hierarchical order as stifling attributes of the universities’ environment (see 4.4.6 for details). However, in comparison with the chaotic and constantly changing organisations of the French universities affiliated with the same HES model, in my view, the universities of western Mediterranean Europe can also demonstrate that a well-proven professional organisation model can hold its structural form for many decades and be scaled up and down through several major societal changes.

Romania and Bulgaria (F(S)br)

The Bulgarian/Romanian adaptation of the French university model (Fbr) is represented in the data by four universities, namely (as in 1962) *Universitatea Alexandru Ioan Cuza* (the Alexandru Ioan Cuza University (Iași)), *Universitatea Constantin Ion Parhon* (the Constantin Ion Parhon University (Bucharest)), *Sofiiski Daržaven Universitet* (the State University of Sofia) and *Institutul Politehnic Timișoara* (the Technical Institute of Timișoara). They were all Soviet-influenced universities in the data until 1993 and throughout the study period remained public state institutions responsible to their respective ministries of education (and Science). Of these, the Technical Institute of Timișoara in the field of technology remains the only field-specific university. All four are stable and in their basic organisational structure, are quite similar to one another: all have a U-1 level main structure of faculties (F) and under it they either always had or at some point during the study period developed a system of departments (D) along with some other unit types at U-2 level.

The Balkan, Former Yugoslavian Countries (F(S)y) and Albania (F(S)a)

The Yugoslavian (Bosnia & Herzegovinian/Serbian/Croatian/Slovenian/Montenegrin/Macedonian) adaptation of the French university model (Fy) is represented in the data by six universities, namely (as in 1962) *Sveučiliste u Zagrebu* (the University of Zagreb), *Univerza v Ljubljani* (the University of Ljubljana), *Univerzitet u Beogradu* (the University of Belgrade), *Univerzitet u Sarajevu* (the University of Sarajevo), *Univerzitet vo Skopje* (the University of Skopje) and *Univerzitet Novi Sad* (the University of Novi Sad). The Albanian adaptation of the French university model (Fa) is represented in the data by a single university, namely (as in 1962) *Universiteti Shtetëror i Tiranës* (the Tirana State University). They were all Soviet-influenced universities in the data until 1993 and remained also afterwards as public state universities, even if academically more independent. Their adaptations also embody the French HES model in that neither technical nor commercial/economics universities exist separately, but instead were set up as faculties (F) or other types of units inside multi-disciplinary universities. As in other countries of European history (see 4.5.3), the universities have held an important role in the national awakening as well as patriotic integration of their citizens, and the case of the former Yugoslavian universities could not be stronger in this respect. The six universities in the data, which are quite similar to each other, all became the leading universities in their six post-Yugoslav respective countries, and a model for most newer-founded additional national universities to copy their organisational structures from. The universities of Zagreb and Belgrade even seem to intentionally ‘mass produce’ affiliate units (see 5.4.2 for details) to become the basis of the younger universities in Croatia and Serbia, and some of the other universities in this group do the same in their countries, but with less determination and volume.

5.3.3 Universities in HESs Based on the German HES Model

The frequency distribution of units belonging to the universities' professional organisation per their organisational levels location and per their unit types in the German HES model affiliated universities as well as their temporal development are presented in Figures 50 and 51.

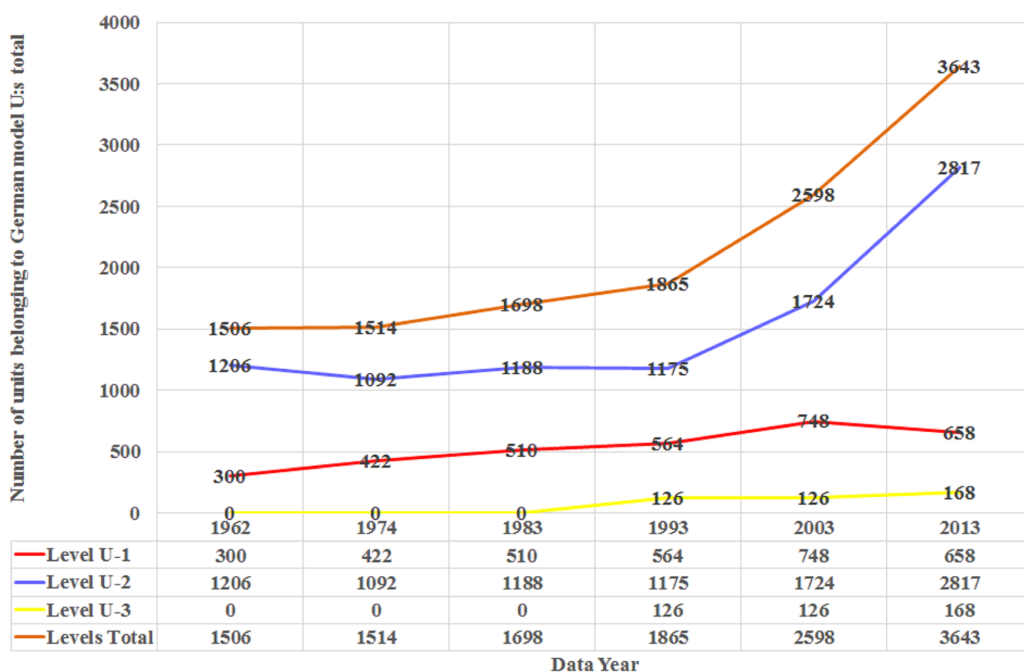


Figure 50. The German HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location.

Figure 50 demonstrates that in comparison with the 'U-1 level heavy' French HES model affiliated universities, the *German HES model affiliated universities are on average structurally balanced so that at the U-2 level, there are always at least twice the number of units there are at the U-1 level*. Also, the departmentalisation trend has been visible since 1993, but the 'levels above' reform trend just since 2003, and even then, it is barely visible in the number of units at the U-1 level. The number of units at the U-3 level appears only in 1993 and develops very moderately since, unlike in the French HES model affiliated universities. All the above is evidence that the organisational development of structures is more balanced and sedate in the German HES model affiliated universities than in the French HES model affiliated ones. Another way to describe it would be to say that universities affiliated with the French HES model usually have a 'wider' organisation, whereas those affiliated with the German HES model usually have a 'narrower' and 'taller' organisation. Figure 51 does not add as much information in comparison with the

French HES model. In Figure 51, the overall departmentalisation trend clearly dominates, but the number of departments (D) started to exceed the number of institutes (I) about a decade earlier. Clinics (Cl) are surprisingly for the most part of the study period the fourth most numerous unit category in the German HES model affiliated universities, and the rise of the centres (Ce) after 2003 to equal about the number of faculties (F), and the rise of the research centres (RCe) to a lesser extent in the period are notable.

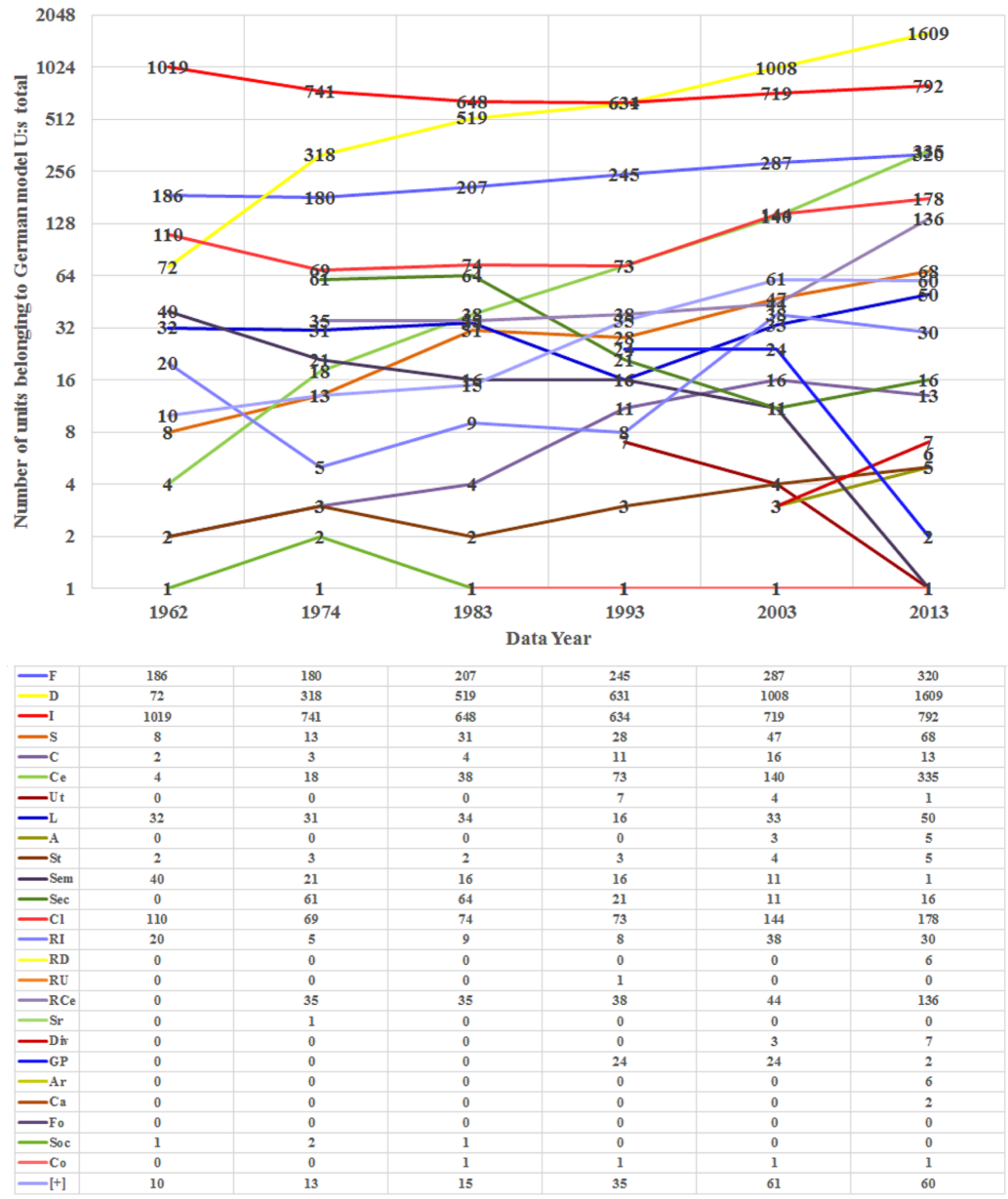


Figure 51. The German HES model affiliated universities in the data per unit types (shown in logarithmic scale for improved readability; the legend of unit category abbreviations is found in Appendix 3).

Germany, from Divided to United (G)

The German university model (G) is represented in the data by seven universities, namely (as in 1962) *Universität zu Köln* (the University of Cologne), *Ernst-Moritz-Arndt-Universität Greifswald* (the Ernst Moritz Arndt University of Greifswald), *Martin-Luther-Universität Halle-Wittenberg* (the Martin Luther University of Halle-Wittenberg), *Justus-Liebig-Universität Giessen* (the Justus Liebig University of Giessen), *Humboldt-Universität zu Berlin* (the Humboldt University, Berlin), *Technische Hochschule München* (the Technical University of Munich) and *Freie Universität Berlin* (the Free University of Berlin). Out of these, the four universities that were located in the area of East Germany are Soviet-influenced universities in the data until 1993. In the case of Germany, it can thus be claimed that both the geographical location of a university and the political regime of that location can significantly affect the development of its organisational structures during the decades when Germany was a divided nation. In Mintzbergian terms, the geographical location is a contingent factor and attribute of a university's environment while the political regime is a contingent factor of the universities' power relationships. In this case in East Germany the Soviet-influenced HES model and its implementers imposed fundamental section (Sec)-reform in the late 1960s on all universities (as elaborated in 4.5.5 and 5.2.4), whereas in West Germany, at the same time, the universities were free to continue with their existing structures. In reality, even as some German universities have never had major reforms imposed on their organisational structures, many west German universities reformed their structures somewhat later in the 1970s, for example by replacing the U-1 level main (F)-structure of faculties with a (D)-structure of departments. However, as a reform this was usually not as heavy as the involuntary and comprehensive section (Sec) reform in the east. All seven German universities, including the Free University of Berlin, remain independent and autonomous public institutions with public funding and Ministry of Education type jurisdiction coming from *Länder*, the federal German states each of them exists in. The Technical University of Munich represents the technical universities in the group.

The existence of the *Deutsche Demokratische Republik* of East Germany created preconditions for unique organisational circumstances even after its demise: in the physically-divided city of Berlin, the *Freie Universität Berlin* (the Free University of Berlin) had been founded in 1948, because the renowned *Humboldt-Universität zu Berlin* (the Humboldt University, Berlin) ended up on the East German side of the city and there was also a large demand for the creation of a multidisciplinary university in West Berlin. After the reunification of the city in 1990, both universities carried on. However, it did not seem a prudent or appropriate use of resources and complex facilities to have two separate university hospital organisations, both connected to just one medical faculty (F) of one university in a unified city. Therefore, these were merged in 2003 into *Charité – Universitätsmedizin Berlin*, a large academic medical education

and research organisation with university hospitals, which as an organisation unit is both a faculty (F) of the Humboldt University and a *Fachbereich* of the Free University of Berlin, even as it is also quite autonomous and not exactly controllable by either of its parent universities.

If the French *Unités de Formation et de Recherche*, the UFRs as training and research units were not an entirely perfect fit into just the unit (Ut) unit category, similar language and cultural difficulties also exist with the German universities. Even as *Fakultät* clearly and always means just a faculty (F), it is sometimes replaced or superseded with a *Fachbereich*, literally a ‘group or area of disciplines’, which could also be translated as a division (Div), but in practice often becomes a department (D) of the U-1 level main structure type. Also, even as the plain term *Bereich* as such means an area (Ar), complexities of categorisation arise when it is presented with various prefixes, such as *Wissenschaftsbereich* (a scientific discipline) or *Arbeitsbereich* (a work area), of which neither is normally an organisation unit type category at all.

Austria and Hungary (G(S)ah)

The Austrian/Hungarian adaptation of the German university model (Gah) is represented in the data by five universities, namely (as in 1962) *Universität Wien* (the University of Vienna), *Eötvös Lóránd Tudományegyetem* (the Eötvös Lóránd University of Budapest), *Karl-Franzens-Universität Graz* (the University of Graz), *Technische Hochschule in Graz* (the Technical University of Graz) and *Pécsi Tudományegyetem* (the University of Pécs). Out of these, the Hungarian universities are Soviet-influenced in the data until 1993. All these universities were public state institutions with public funding, had a faculty (F)-based main structure at the U-1 level and remained so throughout the study period. As such, they are quite similar to one another and their organisational structures are among the most stable in the data. The Technical University of Graz represents the technical universities in the group.

Czechoslovakia and Its Heirs (G(S)cs)

The Czechoslovakian (Czech/Slovak) adaptation of the German university model (Gch) is represented in the data by four universities, namely (as in 1962) *Karlova universita* (the Charles University (Prague)), *Palackého universita* (the Palacky University (Olomouc)), *Univerzita Komenského* (the Comenius University (Bratislava)) and *Vysoká škola technická v Košiciach* (the Technical University of Košice). They were all Soviet-influenced universities in the data until 1993. As is the case with the universities of Austria and Hungary, the Czech and Slovak universities remain public state institutions with public funding continuing after the dissolution of Czechoslovakia, have a faculty (F)-based main structure at the

U-1 level and remain so throughout the study period. As such they are organisation-wise quite similar to one another and to the Austrian and Hungarian universities, and their organisational structures are among some of the most stable in the data. The Technical University of Košice represents the technical universities in the group.

Greece, Turkey and Cyprus (Ggt)

The Greek/Turkish adaptation of the German university model (Ggt) is represented in the data by three universities, namely (as in 1962) *Athinisin Ethikon kai Kapodistriakon Panepistimion* (the (National and Capodistrian) University of Athens), *Ethnikon Metsovion Polytechneion* (the National Technical University of Athens) and *İstanbul Üniversitesi* (the University of Istanbul). As elaborated in 4.4.6, although culturally different themselves, both Greece and Turkey decided early on to ‘import’ the German, that is Prussian university model, which also strengthened their cultural ties with Germany. As in many European countries, the universities served to strengthen the buildup of national consciousness and the Greek and Turkish nation states. The universities of Athens and Istanbul represent the first university in their native countries, which means that they have functioned as the leading national and affiliation model for the younger Greek and Turkish universities. The Technical University of Athens represents the technical universities in the group. All three remained public state universities throughout the study period. It must be noted that even as Cyprus in this work is by definition accepted as belonging to Europe, before the 1980s no HEIs met the university criteria on either side of the island divided between Greece and Turkey, which is also the reason no Cypriot universities were included in the data.

The (National and Capodistrian) University of Athens provides an interesting example of an attempt to reduce the number of organisational levels from three to two, but later it reverted to three levels. The development of the professional organisation of this university is presented as Notation case 10 of Appendix 4. In this case an original U-1 level faculty main (5F)-structure with a U-2 level department (24D)-structure was converted to a new U-1 level main structure by reforming the old faculties into a school (8S)-structure while elevating the old departments by one level in the new faculty (25F)-structure. A decade later, this has again been converted into a three-level organisation by maintaining the new main school (8S)-structure, but again lowering the provisional faculties into a department (30D)-structure at the U-2 level. At the Technical University of Athens, the U-1 level main faculty (F)-structure between 1983 to 1993 was first replaced with a department (D)-structure and then by 2003 again with a school (S)-structure. In comparison, the University of Istanbul maintained its original U-1 level main faculty (F)-structure throughout the study period. As the university’s organic growth was strong, especially during the last two decades, the number of organisation levels increased first from two to three between 1993

to 2003, and then from three to four between 2003 and 2013. It can thus be concluded that the ‘imported’ Greek/Turkish adaptation of the German university model has been clearly more susceptible to reforms than the other adaptations of the German university model presented thus far.

Denmark, Sweden, Norway and Iceland (Gn)

The Nordic (Swedish, Danish, Norwegian, Icelandic) adaptation of the German university model (Gn) is represented in the data by eight universities, namely (as in 1962) *Kungliga Universitetet i Uppsala* (the Royal University of Uppsala), *Københavns Universitet* (the University of Copenhagen), *Kungliga Karolinska Universitet i Lund* (the University of Lund), *Universitetet i Oslo* (the University of Oslo), *Norges Tekniske Høgskole* (the Technical University of Norway (Trondheim)), *Háskóla Íslands* (the University of Iceland (Reykjavik)), *Aarhus Universitet* (the University of Aarhus) and *Chalmers Tekniska Högskola* (the Chalmers Institute of Technology (Gothenburg)). With the semi-private exceptions of the University of Aarhus until the 1970 and the Chalmers Institute of Technology from 1994 onwards, all of these universities have been public state or legally independent institutions with public funding through the study period, as has been consistent with the Nordic welfare state ideals, as a Mintzbergian contingent factor and attribute of their environment. With the exceptions of the Technical University of Norway / later Norwegian University of Science and Technology and the Chalmers Institute of Technology, both representing the technical universities in the group, all the universities have always had a faculty (F)-based main structure at U-1 level, which in all cases but the ‘levels above’ reformed University of Iceland still survives also in 2013.

Because of historical developments elaborated in 4.4.6, the universities of Uppsala and Copenhagen have functioned in one way or the other as the strong and clear Nordic filiation models for all universities in the Nordic countries, also including Finland (see 5.3.6). The University of Copenhagen stands out as having changed the least of all European universities of the data in the half-century study period in an organisational sense: its U-1 level main faculty structure consisted of five faculties (5F) from 1962 until 2003, when a sixth faculty was added. There were also only minor changes in the U-2 level units, and from 2003 to 2013, a few non-faculty additions to the U-1 level. This professional organisation clearly shows that *in stable societal conditions a scientifically prominent university’s organisational structures can remain stable, unchanged and valid for several decades*, even in the midst of demographic pressures, without a need for reform adjustments just for the adjustments’ sake. In Mintzbergian terms, the stable societal conditions as contingent factors may have discouraged organisational change.

5.3.4 Universities in HESs Based on the British HES Model

The frequency distribution of units belonging to the universities' professional organisation per their organisational levels location and per their unit types in the British HES model affiliated universities as well as their temporal development are presented in Figures 52 and 53. Figure 52 demonstrates that neither the British HES model affiliated universities have been 'U-1 level heavy' in comparison with the French HES model affiliated universities, even though the number of U-1 level units surpassed those in U-2 level units from 1962 to 1974. However, in comparison with the German HES model affiliated universities, in the British HES model affiliated universities, on average, there have been fewer U-2 level units per U-1 level, except in 1983 when departmentalisation was strongest in the universities affiliated with the British HES model. Thus, if the French HES model usually represents 'wider' organisational structures of the operating core and the German HES model 'narrower' operating core, the British HES model is an 'average' between these two, although it also has 'taller' organisational structures of the middle line like the German HES model. In the figure, the 'levels above' reform trend is visible in the 21st century in the coexisting decline in U-1 level unit numbers since 1993 and the growth of U-3 level units since 2003.

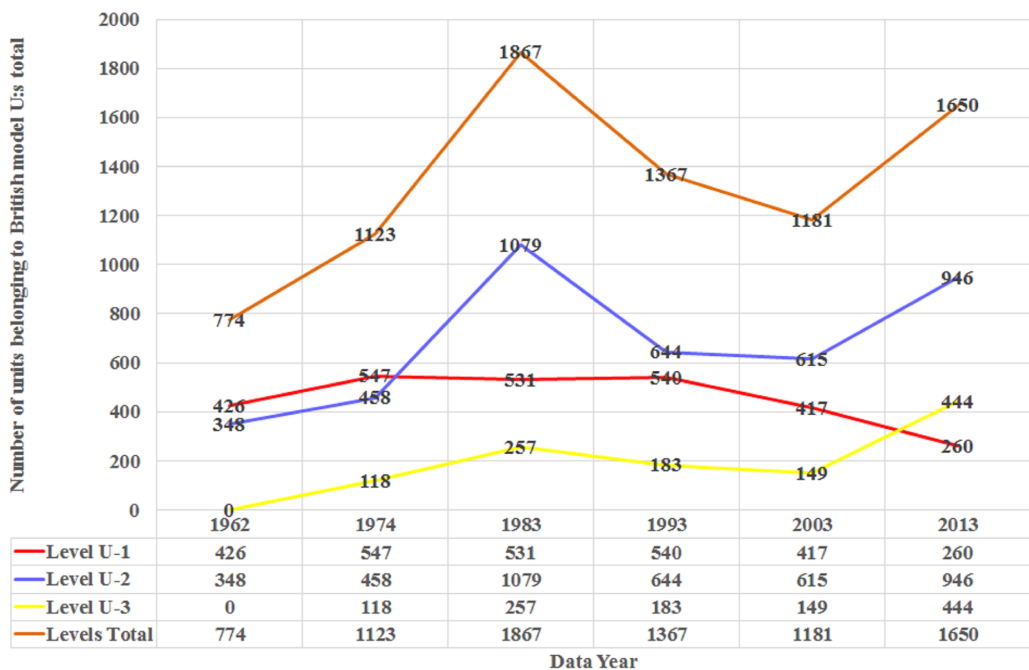


Figure 52. The British HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location.

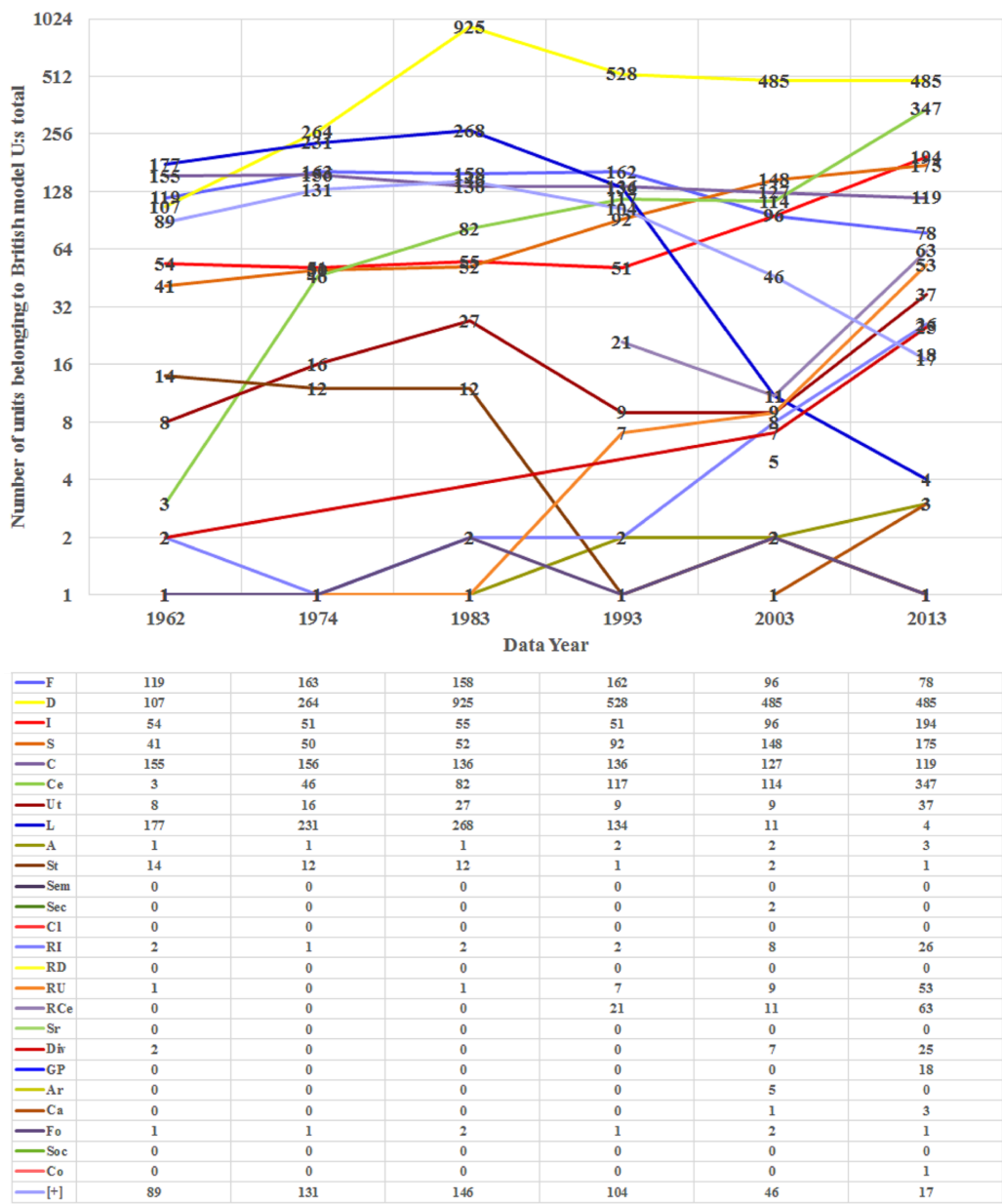


Figure 53. The British HES model affiliated universities in the data per unit types (shown in logarithmic scale for improved readability; the legend of unit category abbreviations is found in Appendix 3).

Figure 53 again demonstrates the intense departmentalisation trend of increasing departments (D) as well as laboratories (L) from 1962 to 1983, and their ‘backlash’ from 1983 onwards. As summarised in 5.3 and discussed in several previous sections, this development is most likely due to a combination of British HES policy of actively creating additional units inside HEIs instead of new HEIs to channel massification

pressures until the 1980s, and the downturn economics and NPM-affiliated intentional confinement and suppression of units in the decades since. Both the rapid ascent and descent in the numbers of these units can thus be understood from the point of view of contingent factors shaping the organisational structures. At the end of the study period, the rise in the numbers of centres (Ce), institutions (I) and research units (RU) is notable, as the universities affiliated with the British HES model developed new types of units, especially for research, even if this development was not as strong as in the French HES model affiliated universities.

England, Wales, Northern Ireland and Malta (B)

The British (English, Welsh, Northern Irish, Maltese) university model (B) is represented in the data by nine universities, namely (as in 1962) the University of Oxford, the University of Cambridge, the Royal University of Malta, the University of London, the University of Durham, the Queen's University Belfast, the University of Wales (Cardiff), the University of Sheffield and the University of Exeter. All of these were considered to be private institutions, even if they all received annual public grants from the state. The only exception is the University of Malta which – as a result of a national HES reform in 1976 – gave up the ‘royal’ patronage, incorporated the Polytechnic of Malta and was restructured in 1980 to become a public university. It is also an inherent feature of the British university model that no separate universities in the applied fields of technology or economics exist, even as there are several independent and special HEIs operating in various disciplines. *Organisation-wise the British universities are, despite their shared evolution history, quite different among one another.* Most have either a college (C)-structure, a faculty (F)-structure or the combination of both as their original U-I level main structure, but that is about the extent to which the similarities reach.

At least two British universities deserve special attention: in the entire data set, only the University of London and the University of Wales had either a federal or confederate organisational structure during the study period. The difference between a confederation and a federation is that the membership in a confederation is voluntary, while in a federation it is not. In a federation, the central entity often has power over its parts, which are accountable to it, while in a confederation the reverse applies: the central entity is quite weak and accountable to the parts. The University of London, founded in 1826, was reconstituted and adopted a federal structure in 1900, to manage its large size better and to strengthen the ties between itself and the many other HEIs in London. The senate of the university was empowered to incorporate new HEIs within the county of London as additional schools (S) under the ‘umbrella’ of the university. As a result, decades and many reforms later, the University of London gradually became a federal university, itself composed of nearly twenty ‘constituent colleges’ – in practice universities –

many of which are scientifically highly prominent. In its history, the University of Wales, founded in 1893, also grew as a federal structure of semi-independent constituent colleges, schools and other HEIs operating in Wales in order to bring them into a unified system for degree exams. Since the 1990s, some of its member institutions became independent universities while the internal status of others was changed. In 2007, the University of Wales replaced its federal structure with a confederate one, allowing most of its individual university colleges to use the title of an independent university while still belonging to the unified degree system. However, after some of the confederation members had been running some controversial affiliate units abroad and others were caught committing fraud, the university quickly gained a bad reputation, which caused the more respected university-level members of the confederation to declare off. This effectively led to the gradual abolition of the whole university, as more confederate members left. The remaining few parent parts of the university were then finally merged as a part of the Swansea Metropolitan University, from 2013. As such, the case of the University of Wales demonstrates that *some contingent factors, namely the attributes of the environment as well as the universities power relationships, can sometimes also cause a rapid structural change to the point of near abolition!*

Ireland (Bi)

The Irish adaptation of the British university model (Bi) is represented in the data by a single university, namely (as in 1962) *Ollscoil Átha Cliath* (the University of Dublin, Trinity College). It was a private university per the British HES model, but was also financially supported by the state through the Irish Department of Education and Science. As elaborated in 4.4.6, organisation-wise the University of Dublin, Trinity College was founded by filiation according to the direct model of the University of Cambridge in 1592, but since there were neither resources nor demand in Ireland for additional colleges (C) at the time, Trinity College has remained the only constituent part in the University of Dublin, even if the name would suggest that there might be additional colleges or other parts in the university. As the oldest Irish university, it also served as an organisational model for all the ones founded later, although it could be noted that the features of the British university model of England, Wales and Northern Ireland are in most respects quite similar to their Irish adaptation.

5.3.5 Universities in HESs Based on the Russian and Soviet HES Models

The frequency distribution of units belonging to the universities' professional organisation per their organisational levels location and per their unit types in the Russian HES model affiliated universities and their temporal development are presented in Figures 54 and 55. Figure 54 demonstrates that for the last three decades of the Soviet Union, the Russian HES model affiliated universities had a simple professional

organisation of just two organisational levels, and that not much development of any kind occurred before the abolition of the Soviet-influenced HESs. This is in line with the findings discussed in 5.3.1. However, after the demise of the Soviet Union and a short pause, the departmentalisation began and the number of units at the U-2 level started to grow at a rapid rate. However, in the data there are no U-3 level units at all or any indication of the ‘levels above’ type of reforms in the Russian HES model affiliated universities. When comparing recurring professional organisation ‘shapes’ with the ‘wide’ French, the ‘narrow/tall’ German and the ‘average/tall’ British HES models, the shape of the Russian HES models professional organisation could be summarised as being ‘flat’ in that it had during the Soviet period, on average, the least units at the smallest number of levels. On the other hand, after the Soviet period, the ratio of units between the U-1 and U-2 levels has quickly approached those of the German HES model, so the shape has become deeper relatively quickly. This could be further parsed so that the usual shape of the Soviet-Russian HES model would be ‘flat’ and for the post-Soviet Russian HES model ‘average’.

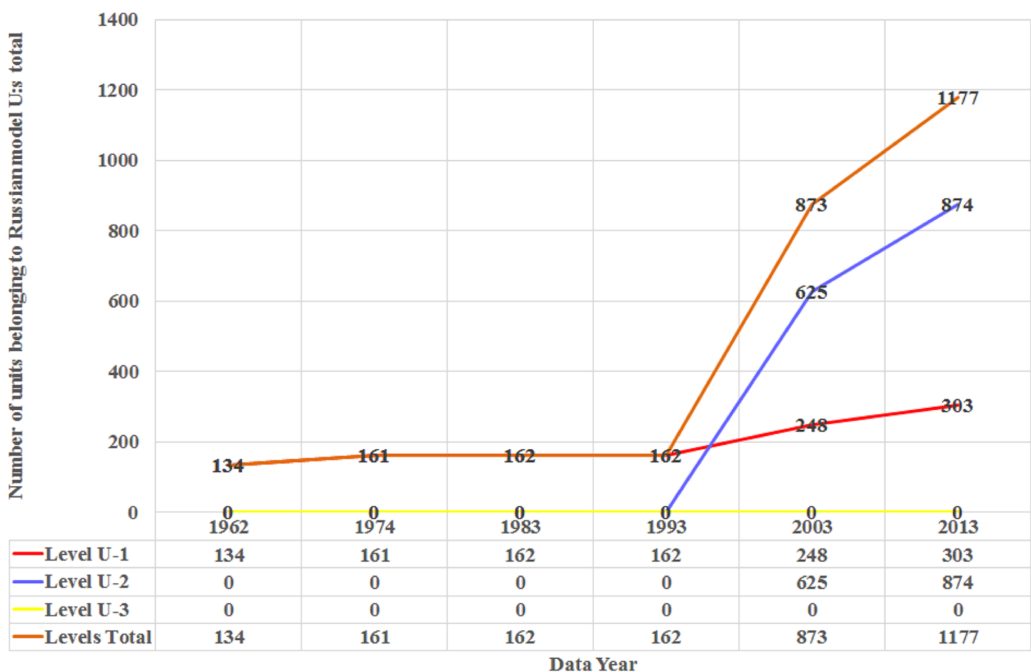


Figure 54. The Russian HES model affiliated units in the data per organisational level (U-1, U-2 and U-3) location.

Figure 55 illustrates the same strong departmentalisation trend after the abolition of the Soviet Union as was visible in Figure 54. In addition, it demonstrates that the Russian HES model affiliated universities are in an overwhelming majority of cases composed of faculties (F) as the U-1 level main structure, with

mainly departments (D) under them at the U-2 level. Also, the number of centres (Ce) and laboratories (L) wss on the rise in the last two decades of the study period.

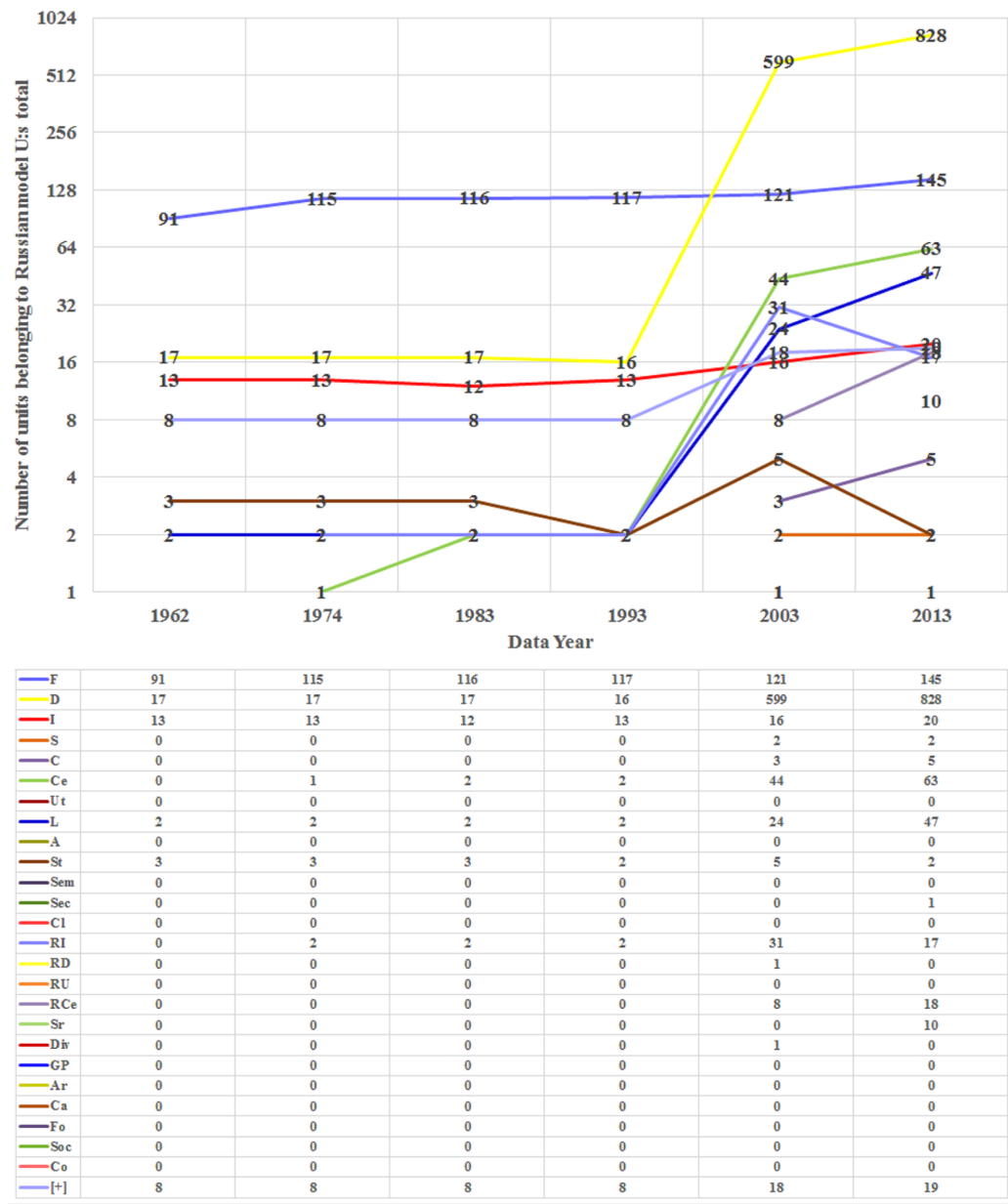


Figure 55. The Russian HES model affiliated universities in the data per unit types (shown in logarithmic scale for improved readability; the legend of unit category abbreviations is found in Appendix 3).

Soviet Union and the Soviet-influenced Universities Elsewhere (S)

The Soviet Union's or Soviet-influenced university model (S) is used only as an amalgamated extension category of Soviet-influenced HEIs in Russia and Eastern Europe from 1922 to 1991. It is represented only for the period from 1962 until 1983, by a total of 37 universities, each being affiliated to another, a more basic national university model, on top of which the Soviet HES model was superimposed. These universities are presented in the context of their basic national university model. It must also be noted that, in addition to universities in the Soviet Union, which suffered from stagnation of their organisational development (see 5.2.3, 5.3 and 5.3.1) during the Soviet period, some universities in the Soviet-influenced HESs in other parts of Europe also suffered from a similar if mostly less-fundamental stagnation of their development. This can also be interpreted as a contingent factor of the attributes of the universities' environment as well as of their power relationships, both discouraging organisational change. However, on a smaller scale, sometimes the opposite occurred: In many Soviet-influenced HESs, at some east-European universities special organisation units were founded to foster, educate and/or undertake research on the ideology of the Soviet system, be they formulated as either Marxism, Marxism-Leninism or Marxist-Leninist philosophy. In the data, eight universities had such units, which were either sections (Sec), institutes (I), centres (Ce) or professorial chairs independent of other organisational units. All these units were special in the sense that after the abolition of the Soviet systems, these units were mostly abolished, instead of merging them into other units, as would have been the more normal procedure within the streamlining of organisational structures of universities.

However, there is at least one field in which the Soviet-influenced HESs were 'ahead of their time' and deserve credit for. As discussed in 5.2.2 and 5.2.9, the data contains a host of examples where universities affiliated with Soviet-influenced university models in the 1960s already had many departments (D), institutes (I) and even whole faculties (F) devoted just to progressive early versions of distance and open university learning, including units for correspondence courses or evening courses, or units aimed at workers and peasants, or their preparatory studies for participation in the normal forms of higher education. There were even a few entire universities devoted only to international exchange and development cooperation, which were meant first and foremost for foreign students (even if they were non-western students), with their numbers comprising up to about three quarters of the student population. These include, in the data *Universitet Družby Narodov im. Patrisa Lumumby* (the Patrice Lumumba Peoples' Friendship University) in Moscow, and not included in the data, *Universita 17. listopadu* (the University of 17th November) in Prague. It is of course clear that raising the average level of participation in higher education within the general population was a clear and explicit objective and political agenda of the Soviet-influenced systems, and one that was also at least partially successful. It is

surprising to find that similar special units for open, continuing, popular and distance education etc. often appeared only decades later in the ‘western’ HES model categories.

Russia (R(S))

The Russian university model (R) is represented in the data by five universities, namely (as in 1962) *Leningradskij Gosudarstvennyj Universitet im. A. A. Ždanova* (the Leningrad State University), *Moskovskij Ordena Lenina i Ordena Trudovogo Krasnogo Znameni Gosudarstvennyj Universitet im. M. V. Lomonosova* (the Moscow State University), *Permskij Gosudarstvennyj Universitet im. A. M. Gor'kogo* (the Perm State University), *Dagestanskij Gosudarstvennyj Universitet im. V. I. Lenina* (the Daghestan State University (Mahač-Kala)) and *Universitet Družby Narodov im. Patrisa Lumumby* (the Patrice Lumumba Peoples' Friendship University (Moscow)). They were all Soviet-influenced universities in the data until 1993 and remained public, mostly state-funded institutions in the Russian Federation. Among them, the Peoples' Friendship University in Moscow was a special type of university in that it was meant mainly for students from developing countries, and included only about 25% domestic students. It was also partially financed by the organisations which took part in its founding. In terms of their organisation, the Russian universities were quite similar. They all had a U-1 level main faculty (F)-structure throughout the study period, often with departments (D) and institutes (I), and the number of organisational levels was often raised from two to three from 2003, with a large number of departments (D) and other units then rapidly growing at the U-2 level. None of these universities went through a ‘levels above’ type of reform in the study period.

The Russian HES model affiliated universities in the data do not include universities in the applied fields of technology or economics, even though outside the data there are several independent HEIs operating in various disciplines both in the Soviet and Russian HESs. The number of such HEIs grew considerably after the abolition of the Soviet Union (see also 4.5.5), and a large proportion of the new HEIs are also private. The HES of the Russian Federation does not have strict official categories, but the universities are set apart from and are higher than the many academies and institutes as lower-level HEIs. Especially in the terminology of the private HEIs, this is sometimes visible in that an institution’s name refers to a different status than it actually has, which is clarified afterwards. I will present illustrating examples: *Moskovskij Gosudarstvennyj Institut Elektronnoj Tehniki (Tehniceskij Universitet)* (the Moscow State Institute of Electronic Technology (Technical University)) is a university level HEI even as its name refers only to an institute; *Volžskij Universitet im. V.N. Tatiševa (Institut)* (the Volzhsky University named after V.N. Tatischev (Institute)) is an institute-level only HEI even as its name refers to a ‘university’; *Vyssšaja Škola Sovremennogo Obrazovanija (Institut)* (the Higher School of Modern Education

(Institute)) is an institute-level HEI, which might not otherwise be revealed from the vague and French-inspired term ‘higher school’; or *Astrahanskaja Gosudarstvennaja Konservatorija (Akademija)* (the Astrahan State Music Conservatory (Academy)) is an academy-level HEI, even as its name refers to a conservatory, that would mean an institution not belonging to higher education at all.

Belarus, Moldova and Ukraine (R(S)bum)

The Belarusian/Moldovan/Ukrainian adaptation of the Russian university model (Rbum) is represented in the data by five universities, namely (as in 1962) *L'vovskij Gosudarstvennyj Universitet im. Ivana Franko* (the Lvov State University), *Kievskij Gosudarstvennyj Universitet im. T. G. Ševčenko* (the Kiev State University), *Belorusskij Gosudarstvennyj Universitet im. V. I. Lenina* (the Byelorussian State University (Minsk)), *Užgorodskij Gosudarstvennyj Universitet* (the Uzhgorod State University) and *Kišinevskij Gosudarstvennyj Universitet* (the Kishinev State University). They were all Soviet-influenced universities in the data until 1993 and remained public, mostly state-funded institutions after the Soviet period in their newly independent countries. They do not include universities in the applied fields of technology or economics. Organisationally they are all similar between themselves and also in relation to the universities in Russia: they all had a U-1 level main faculty (F)-structure throughout the study period, often with additional U-1 level units like departments (D) and institutes (I). The individual Belarusian and Moldovan universities stayed with just two organisation levels throughout the study period, whereas all three Ukrainian universities elevate the number of organisational levels from two to three just in the 21st century, with many departments (D) and other units then rapidly growing at the U-2 level. None of these universities went through a ‘levels above’ reform during the study period.

5.3.6 Universities in HESs Based on Amalgamated HES Models

Since the universities affiliated with the amalgamated HES models are based on two or even three HES models simultaneously, but in other respects are counted as belonging to the most dominant HES model of these, I have not produced frequency distribution charts of their units separately. It must also be noted that amongst themselves these amalgamated models would not form a comparable ‘group’ in relation to any of the essential factors, as each of them has a separate development history.

Switzerland (FGs)

The amalgamated French & German HES model, Swiss adaptation (FGs) is represented in the data by three universities, namely (as in 1962) *Universität Basel* (the University of Basle), *Eidgenössische*

Technische Hochschule (the Swiss Federal Institute of Technology (Zürich)) and *Université de Fribourg* (the University of Fribourg). The Swiss Federal Institute of Technology represents the technical universities in the group and is the only one funded predominantly and directly by the federal state and by Swiss industry. Even though all three are public universities and mostly publicly funded, throughout the entire study period, the universities of Basel and Fribourg were operated by their respective cantons instead of the Swiss state, in addition to which the University of Fribourg is also Catholic in nature. As elaborated in 4.4.6, the Swiss universities have been able to enjoy exceptionally stable and peaceful periods of uninterrupted development. As organisations the universities of Basel and Fribourg had a main faculty (F)-structure with institutes (I) and departments (D) at their U-1 level as well as some research units at both U-1 and U-2 levels, throughout the study period. The Swiss Federal Institute of Technology has a main department (D)-structure at U-1 level usual to most German HES model affiliated technical universities, and many unit types including research units at both U-1 and U-2 levels. It went through a ‘levels above’ reform between 2003 and 2013, in which a former U-1 main structure of 17 research departments (17RD) was moved down one level and converted to 15 research institutes (15RI), while a new U-1 level main structure of just five departments (5D) was adopted.

Poland and the Baltic Countries (GR(S)bp)

Sharing a long and checkered history together, as elaborated in 4.4.6, the universities of the amalgamated German & Russian HES model, Baltic (Lithuanian/Latvian/Estonian)/Polish adaptation (GRbp) are represented in the data by seven universities, namely (as in 1962) *Uniwersytet Jagielloński* (the Jagellonian University (Cracow)), *Vilniaus Valstybinis V. Kapsuko Universitetas* (the Vilnius V. Kapsukas State University), *Tartu Riiklik Ülikool* (the Tartu State University), *Uniwersytet Wrocławski im. Bolesława Bieruta* (the Wrocław University), *Latvijskij Gosudarstvennyj Universitet im. Petra Stučki* (the Latvian State University (Riga)), *Katolicki Uniwersytet Lubelski* (the Catholic University of Lublin) and *Politechnika Gdańska* (the Technical University of Gdańsk). They were all Soviet-influenced universities in the data until 1993, and remained public and publicly funded state institutions for the study period, except for the private Catholic University of Lublin which is financed by the Polish Episcopate and through gifts – even through the entire Soviet-influenced HES period – until it became partly subsidised by the government. The Technical University of Gdańsk represents the technical universities in the group, while the state universities of Vilnius, Tartu and Riga have all had also an important role in strengthening the buildup of national consciousness in their respective small Baltic countries of Lithuania, Estonia and Latvia, before and after the Soviet-influenced HES period when they were *de facto* occupied by the Soviet Union. As organisations they are much alike one another and remind one of the organisations of both German and Russian HES model affiliated universities: all seven – including the

technical university – have a main faculty (F)-structure at the U-1 level with various other unit types at U-1 and some at U-2 levels throughout the study period, during which also none of them underwent a ‘levels above’ reform of any kind.

Finland (GRf)

The amalgamated German & Russian HES model, Finnish adaptation (GRf) is represented in the data by four universities, namely (as in 1962) *Helsingin Yliopisto* (the University of Helsinki), *Teknillinen Korkeakoulu* (the Institute of Technology (Helsinki)), *Åbo Akademi* (the Åbo Academy (Turku)) and *Oulun Yliopisto* (the University of Oulu). As elaborated in 4.4.6, the University of Helsinki was founded in 1640 (in Turku, before moving to Helsinki in 1828). Organisationally, it followed the Nordic model of the University of Uppsala, and as the oldest Finnish university, it has also served as the organisational model for all the others founded later. In addition, and as in many smaller European countries, it also had an important role in strengthening the buildup of national consciousness and achieving independence from Imperial Russia. With the semi-private exceptions of the Åbo Academy until 1981 and the Institute of Technology / later Aalto University from 2010 onwards, all of these universities have been through the study period public and autonomous state institutions with mostly public funding, which has been consistent with Nordic welfare state ideals – as again a contingent factor and an attribute of their environment. With the exception of the Institute of Technology / later Aalto University, the technical university in the group, they always had a faculty (F)-based main structure at U-1 level, which in all cases – but the ‘levels above’ reformed Åbo Academy – still survives in 2013.

The Netherlands, Belgium and Luxemburg (FGdbl)

The amalgamated French & German HES model, Dutch/Belgian/Luxemburger adaptation (FGdbl) is represented in the data by nine universities, namely (as in 1962) *Université Catholique de Louvain* (the Catholic University of Louvain), *Rijksuniversiteit te Leiden* (the University of Leyden), *Rijksuniversiteit Groningen* (the State University, Groningen), *Rijksuniversiteit te Gent* (the State University of Ghent), *Université Libre de Bruxelles* (the Free University of Brussels), *Vrije Universiteit* (the Free Reformed University (Amsterdam)), *Faculté Polytechnique de Mons* (the Polytechnical Faculty of Mons), *Katholieke Universiteit te Nijmegen* (the Catholic University of Nijmegen) and *Université Internationale de Sciences Comparées* (the International University of Comparative Sciences (Luxemburg)). Organisation-wise, these were again closer to their counterparts in France than what the Mediterranean universities were. For reasons discussed in 4.4.6, the average number of ‘private’ universities is highest in this group of all the national adaptations – not counting the British HES affiliated models which

basically consider all universities as private – as both the Catholic and the ‘free’ universities are private, although they are also mostly state-funded. There is just one technical university among this group, the Polytechnical Faculty of Mons, that merged in 2009 with another university in the field of commerce and economics, *Université de Mons-Hainaut* (the University of Mons-Hainaut), to form a new *Université de Mons* (University of Mons) operating in both the fields of technology and of economics.

As discussed and described in detail in 5.2.2, the distinctive feature of the Dutch universities was the so-called combined faculties (F*C) not found elsewhere in the same format. Also, the university scene in Luxemburg demonstrates a unique organisational case of two universities/HEIs going above and beyond the normal merger and division categories in a curious interchange of their organisational units and structures. *Université Internationale de Sciences Comparées* (the International University of Comparative Sciences), founded in Luxemburg in 1957, was reorganised in 1974 with *Cours supérieurs des Sciences*, an older 19th century Luxemburg HEI without a university status, so that the organisational units of both are divided and reassembled anew to form two new institutes, *Institut Universitaire International de Luxemburg* (the International University Institute of Luxemburg) and *Centre Universitaire de Luxemburg* (the University Centre of Luxemburg). Out of these, the former then became a constituent institute (I) of the latter, until both were re-merged into a single *Université du Luxembourg* (The University of Luxemburg) in 2003. In the data this is the only example of this type of a total interchange of structures between two HEIs.

Scotland (BFGs)

The amalgamated British, French & German HES model, Scottish adaptation (BFGs) is represented in the data by two venerable universities, namely (as in 1962) the University of St Andrews and the University of Edinburgh. Through the study period, both have been private universities per the British HES model, but as discussed in 4.4.6, they are largely financed by the state and frequented by more modest social classes than their scientifically as prestigious English equals, and in some other respects they are more like their continental counterparts. They both have both a faculty (F)-structure and a college (C)-structure as their main structure at the U-1 level, with various additional units at the U-1 and U-2 levels. However, between 2003 and 2013 the University of Edinburgh went through a major reform, after which its organisation levels were increased to three: the U-1 level was left with three colleges (3C) only, the previous faculty (F)-structure was converted to a school (S)-structure and moved down to the U-2 level along with other unit types, while many departments (D) and research unit categories were moved further to U-3 level. However, this is far from a usual ‘levels above’ reform.

5.4 Findings on the General Development and Changes of University Organisations

So far I have gone through the data from the points of view of the organisation unit type categories, their structural locations and various attributes, as well as the HES models and their national applications at the level of individual affiliated universities. I will move on to findings on the development and changes of the European university organisations as a whole. I will also evaluate the universities' development in my data in the light of the contingency factors confronted so far and relative to Mintzberg's structural hypotheses (as mentioned in 2.6.2) concerning the organisations' functioning and effectiveness.

5.4.1 The Birth, Organic Growth and Unending Existence of University Organisations

Looking at the various ways in which the universities' organisational structures in theory are born, as discussed in 2.4.1, the comparison with the data makes it obvious that *filiation* is still by far the most usual way, both between and within universities. Also, the results of both *compilation* and *bricolage* probably exist in the many reformed university organisations in the data, but as the data cannot directly answer most questions on why an organisation has changed the way it has, it is not possible to study the compilation or bricolage cases further. The second and third ways, the *function-based organisation motives* and *conscious organisational design* can also be interpreted and translated as the universities' attempts to provide a conscious answer to the Mintzbergian contingent factors as environmental and other attributable conditions challenging the existing organisational structures to change or to remain unchanged. Again, as the data mostly do not say anything specific about those motives or the conscious thoughts of the universities' reformers directly, the why-type questions have not been studied further. However, it is conceivable that the four HES models and their national HES adaptations, are sometimes an intentional part of those motives and the conscious design, as universities are also created and being reformed to fit the already-existing organisational and HES functions, norms and culture.

As demonstrated by Table 5 and Table 6 in 5.1, *the overall development trend of university organisations during the five-decade study period demonstrates strong organic growth, as the number of European universities has more than quintupled! Also, inside the universities, the growth has been nearly as rapid:* as discussed with Figure 10 in 5.2, the total number of organisation units belonging to professional organisations of the universities has tripled during the study period from 1962 to 2013. However, as with the number of universities (see 5.1.1), there are differences between the universities affiliated with each of the HES models in the pace of their unit growth, as Figure 44 in 5.3 demonstrated. The British HES model affiliated universities grew internally the slowest, barely doubling during the study period, from 774 to 1650 units. The German HES model affiliated universities were not much faster, growing from 1506

to 3643 units. The French HES model affiliated universities' internal growth is already much faster, with the number of internal units expanding over three and a half times, from 1246 to 4517. Still, the Russian HES model affiliated universities are in a category of their own, as the number of units in them increased nearly ninefold from 134 to 1177. On the other hand, it must be remembered that the Russian HES model affiliated universities start with the simplest and 'flattest' organisations, which makes the very rapid growth more intelligible.

Looking at historical periods within my half-century study, as contingent factors of the environment of universities, at least the massification of higher education of the 1960s and 1970s (see 4.5.1 for details) has accelerated the organisational growth of universities both internally and externally, and the economic downturns and related political programs like NPM (see 4.5.6 for details) have decelerated that growth, even if never actually turning the overall development at the European level from an ascending into a descending one. I will give some university-level examples of these developments. The professional organisation of the *Sofiiski Daržaven Universitet* / later *Sofiiski Universitet Sv. Kliment Ohridski* (the Sofiiski Daržaven Universitet / later St. Kliment Ohrid Sofia University) demonstrates well the progress of constant organic growth, while continually maintaining the same number of organisation levels, the same main structure at U-1 level (of faculties (F) in this case) and without fundamental-level structural reforms occurring in the study period. This is presented as Notation case 11 of Appendix 4. Then again, the development of the professional organisation of the University of Exeter demonstrates well first a 'slump' (between 1983 and 1993) in this otherwise continuous growth period, which was then also followed and complemented with major structural reforms of replacing the U-1 level main structure of faculties (F) first to schools (S) (between 1993 and 2003, at the same time integrating most of the U-2 level units away) and then again to colleges (C) (between 2003 and 2013, at the same time allowing the organisation to grow again and reforming a higher number of units at the U-2 level). This is presented as Notation case 12 of Appendix 4.

These two examples demonstrate some recurring developments, but there are also many completely different solutions to the same challenges. For instance, *Univerzitet vo Skopje* / later *Univerzitet 'Kiril i Metodij' Skopje* (the University of Skopje) provides a good example of how a fast-growing university can absorb the massification pressures of organic growth in its organisational structures also without growing a large host of departmental units under the U-1 level main structures or adding organisation levels. This is achieved by making the organisational structure very wide instead of making it taller, by extending the U-1 level main structure instead of adding any sub-levels to it. The University of Skopje had a student population of 7500 in 1962, 24 890 in 1974 and peaking at 42 520 in 1983. The configuration of the professional organisation at the same period from 1962 through 1974 to 1983

illustrates well, how this ‘lateral’ instead of vertical growth is achieved, with the number of faculties (F) at U-1 level increasing from 7F to 9F to 26F respectively. This is presented as Notation case 13 of Appendix 4. However, it must be noted that for the entire study period, the professional organisation of most universities just kept on growing, and more in the direction of a ‘taller’ than a ‘wider’ organisation. A more detailed picture of this ‘measurable’ phenomenon is given in 5.5.1.

As described in 2.4.2 and especially in 2.4.4, the universities seem to have an inherent ability to resist change and to avoid deterioration and ‘death’. Even if the risk of being abolished was still high for the medieval universities, it declined quickly over the coming centuries: from the 16th to the 18th century, fewer than fifty universities were abolished (see Frijhoff 1996, 71); and between 1812–1944, only 16 (see Rüegg 2004, 673–702), even with considering all the calamities of the many wars of the period. Although many universities were physically all but destroyed by wars – in the data for example *Belorusskij Gosudarstvennyj Universitet im. V. I. Lenina* (the Byelorussian State University) and *Uniwersytet Jagielloński* (the Jagiellonian University (Cracow)) in the Second World War and *Universitas Francisci* (the Franz I University (after the Holy Roman Emperor) in Lviv, the later Lviv State University) in bombing in 1848 – this was almost never a decisive reason to abolish them completely. On the contrary, many universities were laboriously moved to escape the horrors of war, like *Leningradskij Gosudarstvennyj Universitet* (the Leningrad State University) that was temporarily evacuated to Saratov, and the abovementioned Jagiellonian University that operated as a clandestine ‘underground’ university of Cracow in 1942–1944. After the wars, almost all universities that had suffered in them were quickly rebuilt and restored as the harbingers of a new era of hope, peace and prosperity. It is then a consistent yet baffling conclusion to find that both in- and outside my research data – though so many universities have been merged with others or the status of some changed to other types of HEIs – not a single European university has been permanently and entirely abolished since 1945!

5.4.2 Mergers, Divisions and Reforms of University Organisations in the Data

Looking at the mergers of universities in the data, several types can be discerned. Keeping in mind the four merger categories described in 2.4.3, it seems that pure *integration mergers* are very rare, whereas *diversification mergers* are much more common, and that *takeover mergers* are much more common than *consolidation mergers*. However, looking at several merger and division cases of real universities, these merger category definitions seem somewhat imprecise and inadequate for describing many real cases. The problem with integration (between institutions with alike academic areas) vs. diversification (between different but preferably complementary areas) merger categories is the precise definition of what ‘alike’ and ‘different’ mean, as many real mergers demonstrate both simultaneously: partially alike, but partially

different. The problem with the consolidation (two or more institutions of similar size coming together to form a new institution) merger category is that an entirely new institution can also be merged from two or more institutions that are not of similar size. Lastly, the problem with the takeover (of a smaller institution by a larger one) merger category is that two institutions of the same or nearly similar size can be merged together so that one still takes over the other, as the identity of the new merged institution is not always new but can still be taken directly from just the other half.

Thus, instead I would categorise all mergers as either *total mergers* or *partial mergers*, based on the scope of their implementation. Firstly, total mergers occur when two or more independent universities and/or other HEIs are merged together to form a new entity with an identity that differs from any of the merging parts. The earliest example of this in the data – long before the actual study period – is *Martin-Luther-Universität Halle-Wittenberg* (the Martin Luther University of Halle-Wittenberg) in 1817, which merged with the University of Wittenberg and the University of Halle in an integration as well as a consolidation merger. However, problems with the merger categories rise with the example of *Aalto-yliopisto* (the Aalto University (Espoo)) (see 5.1.1 and also Li 2011, 227–237), which, from 2010, brought together as a new university three previously independent universities operating mostly but not entirely in different scientific fields – so this merger did not have a clear position on the integration versus diversification merger category axis. Furthermore, the case positions itself even worse on the consolidation versus takeover merger category axis, since the three universities coming together were of clearly different sizes, when consolidation necessitates institutions of at least of a similar size. As there were also more than two merging, it was not a takeover or even two simultaneous takeovers either, since the identity of the largest merging institution gave way to a totally new, joint institutional identity. In any case, total mergers can be found only in the German and French HES model affiliated universities.

Secondly, partial mergers occur when an independent university or other type of HEI is merged as a part and thus becomes a structural unit or units within another university or HEI and its professional organisation, while the other university or HEI also retains its previous identity in the merger and it is not replaced with a new or reformed one. There are over twenty examples of such partial mergers in the data. They can be found from all HES model affiliated universities equally, but mostly in the 2000s. To give an example, *Háskóla Íslands* (the University of Iceland (Reykjavik)), the only Icelandic university until the late 1980s, merged with *Kennaraháskóli Íslands* (the Icelandic University of Education) in 2008 so that the merging university became a school (S) with three faculties (3F) at the same time that the existing U-1 level basic faculty (11F)-structure was also ‘levels above’ reformed into a new U-1 level main structure of five schools’ (5S)-structure. The old faculty (F)-structure moved under the schools’ main structure to the U-2 level and was at the same time reformed to cover a total of 25 faculties (25F)

including the merged ones. Regardless of the simultaneous ‘levels above’ reform it is clear that after the reform, the University of Iceland had retained its identity, while the merged Icelandic University of Education had been taken over and had become just four units in the structural organisation of the wider university. Partial mergers are thus nearly always also takeover mergers by definition, except when two institutions of same or nearly similar size are merged so that regardless of the size similarity, one still takes over the other. An example of this from the data is *Universidade Técnica de Lisboa* (the Technical University of Lisbon) which in 2013 merged with the *Universidade de Lisboa* (the University of Lisbon), a non-technical university of precisely the same size by academic staff and student numbers, to continue just as a larger University of Lisbon. This was thus a pure diversification merger, as the technical university’s faculty (F) and institute (I) structures were as such assimilated as extended parts of the non-technical university’s structures, while the governance model and strategic apex composition remained mostly as they had been at the non-technical university. Even though this merger was clearly of a takeover type by its nature, by the strictest definition of a takeover merger it was not, since the merging partners were of precisely equal size.

From the point of view of organisational structures, very interesting mergers are those where the merging partners are of a similar size but have a different unit category type in their U-1 level main structures. Such an example is provided by the *Norges Tekniske Høgskole* (the Technical University of Norway (Trondheim)), with a main structure of seven departments (7D), which in 1968 had a total merger with both a College of Arts and Science (C), with a main structure of three faculties (3F), as well as the Museum, the Royal Norwegian Society of Sciences and Letters (Soc), with a main structure of three departments (3D). Hence the merged new entity, *Universitetet i Trondheim* (the University of Trondheim) for a while had a fascinating organisational structure, in which the U-1 level main structure was composed of one institute (I), one college (C) and one society (Soc) instead of a uniform unit category, before category-harmonising reforms to a U-1 faculty (F)-structure were gradually made between 1983 and 2003. Before that, the merger had created quite a rare organisation in which a faculty (F)-structure existed, but just at the U-2 level, decades before the actual ‘levels above’ type of reforms came to be invented. This development is clearly illustrated by the merged university’s professional organisation, which is presented as Notation case 14 of Appendix 4.

Out of all possible contingent factors promoting change in the universities’ organisational structures, both total and partial mergers as change processes of the professional organisation seem to be ensued based either on size (when it is thought that a larger university is more efficient or has a more complementary set of disciplines), the attributes of their environment or their power relationships (when it is seen for political or economic reasons that a certain region or a discipline can no longer hold an independent

university or another type of HEI and the merger is seen to be saving funding or promoting interdisciplinarity).

Looking at the divisions of universities in the data, they can also be discerned as being of more than one type and categorised as either *total divisions* or *partial divisions*, again based on the scope of their implementation. Firstly, total divisions occur, when an existing independent university or other type of HEI is divided into two or more independent new universities and/or HEIs in a way in which the original institution being divided ceases to exist. The earliest example of a total division in the data – again long before the actual study period – is *Universitas Carolina* (the University of Prague), which due to language disputes had split in 1882 into separate Czech (*Česká universita Karlo-Ferdinandova*) and German (*Deutsche Karl-Ferdinand-Universität*) universities as mentioned in 4.4.6. In 1920, the Czech one was again renamed as *Karlova univerzita* as the ‘successor’ of the original university, while the German one was left with a new name *Deutsche Universität Prag*, changed again in 1939 to *Reichsuniversität* by the occupying Nazi regime. Both universities were closed during the Second World War, after which the German one was abolished and the Czech one continued as *Univerzita Karlova* (the Charles University (Prague)) belonging to the data. Further examples based on language (mentioned in 5.1.1) include the division of Belgian *Université Catholique de Louvain* (the Catholic University of Louvain) and *Université Libre de Bruxelles* (the Free University of Brussels) into distinct Dutch and French speaking universities in 1969–1970. Other total division instances are size-based and include the four 1960s and 1970s French HES model affiliated examples described in 5.1.1, as well as the University of London, which due to its rapidly growing size, was totally ‘divided’ into several semi-independent colleges, schools and other HEIs. This happened in 1900 with the implementation of a federal structure (see 5.3.4). Most of these former units of the old university later attained independent full university status, and some have simultaneously stayed a part of the federal organisational structure of the University of London, while others have left. With the exceptions of the universities in London and Prague discussed above, affiliated with the British and the German HES models respectively, total divisions in the data can be found only in the French HES model affiliated universities.

Secondly, partial divisions occur when an existing independent university or other type of HEI relinquishes parts of its professional organisation to become an independent new university or HEI, while the relinquishing university or HEI otherwise still continues to exist as it was. The data contains dozens of instances of partial divisions, which can also be found in all HES model affiliated universities. The examples range from the moving of a single structural unit, most often a university’s affiliate faculty (F*A), institute (I*A), school (S*A), college (C*A) or other type of unit located in a city other than that where its parent university is located, to the moving of large and complex parts of the professional

organisation, which in both cases are made independent and ‘raised’ to university/HEI status in the process of moving and division. Examples of the first kind include *Teknillinen korkeakoulu* (Institute of Technology (Helsinki)), which since 1965 had an affiliate branch in Tampere that was in 1972 made independent and elevated to the status of a university as *Tampereen teknillinen korkeakoulu* (the Tampere University of Technology), and *Univerzitet u Sarajevu* (the University of Sarajevo), which had founded two affiliate faculties of mining and chemical engineering in Tuzla, which were made into an independent *Univerzitet u Tuzli* (the University of Tuzla) in 1976. An example of the latter, more complex kind is the University of Durham which in 1963 gave up a substantial share of its professional organisation, including several faculties (F) and a college (C) located in Newcastle, to become the new independent University of Newcastle upon Tyne. There are also two universities which seem to have intentionally ‘mass produced’ affiliate units to be later elevated to the status of universities through the process of a partial division during the early decades of the massification of higher education. These are *Univerzitet u Beogradu* (the University of Belgrade), which thus created four provincial universities to Niš, Priština, Titograd (later renamed Podgorica, the capital of Montenegro) and Kragujevac in the 1960s and 1970s, and *Sveučilište u Zagrebu* (the University of Zagreb), which likewise created three provincial universities in Rijeka, Split and Osijek during the 1970s. Such a clear trend of answering the contingent needs of massification of higher education through intentional filiation of the oldest and most prestigious universities was, to some extent, implemented in all of the former Yugoslav republics at the time, and the bulk of public universities at least in contemporary Croatia, Serbia, Montenegro, Bosnia and Herzegovina originated through this process. Similar isolated instances of intentional filiation to grow new provincial universities can also be found in the Russian and other Soviet-influenced HES model affiliated universities.

Reminiscent of this discussion on mergers, out of all possible contingent factors promoting change in the universities’ organisational structures, both total and partial divisions seem to be ensued based either on size (when it is thought that a single university can no longer maintain the realised or predicted future growth), language (when it has become a working solution to an ethnic dispute) or another attribute of their environment or power relationships (like when a certain region or a discipline is seen to require its own university or another type of HEI in order to develop into the future).

In the data there are about a dozen universities during the 50-year study period which have been both partially or totally merged, and partially or totally divided. In the most common type of case, a large and venerable university both absorbs at least one smaller university or other HEI to become one of its subunits in a partial takeover merger, and at some other point produces a unit of some kind, often an affiliate that is later partially divided from its organisation to become an independent university or another

type of HEI. For example, the University of Edinburgh has both given up one of its colleges (C) in a partial division to become the independent Heriot-Watt University in 1966, as well as absorbed another college (C), the Edinburgh College of Art in a partial takeover merger in 2011 to continue much as and where it was, but as a part of the larger organisation of the university. Also, the already presented (con)federal University of Wales (see 5.3.4) makes up a special case: as many of its constituent parts left after becoming – or in order to become – independent universities, the university was partially divided many times in a row. Finally, the remaining few parent parts were themselves merged as parts into another university, as a kind of rescue operation. There are also two universities which were both totally divided, and then decades later, totally merged again with the same institutions they divided from. These are the *Université d'Aix-Marseille* (the University of Aix-Marseilles, see 5.3.2), which was first totally divided into three universities in 1968–1973, and *Université de Clermont-Ferrand* (the University of Clermont-Ferrand), which was totally divided into two universities in 1976. Later, both of these were re-merged back to their unified ‘original’ status in 2012 and in 2017 respectively.

Alternatively it is also possible that the relinquished parts as structures in a partial division are simultaneously partially merged as units into the professional organisation of another university or HEI, although this type of *division-merger-interchange* is much less common than either partial divisions or partial mergers are separately. An example from the data comes from *Helsingin yliopisto* (the University of Helsinki), which had an institute (I) of physical education that at the beginning of the 1970s in several phases was partially divided from the university and both physically moved as well as partially merged into *Jyväskylän yliopisto* (the University of Jyväskylä) as a new faculty (F) among the existing faculties.

Many of the previous examples from the data include several cases, where some organisational structures can ‘change’ the level of higher education they exist in, as discussed in 2.4.3 and 4.6, from the macro to the meso or vice versa. In the former, independent HEIs become organisational structure units of other HEIs, thus moving from the HES level to the HEI level; in the latter, some organisational structure units of HEIs become independent HEIs themselves, thus moving from the HEI level to the HES level.

Even as the various kinds of mergers and divisions cover a majority of all reforms of the universities in the data, there are many other kinds of reforms not so easily classifiable. However, most minor changes of organisational unit structures cannot be regarded as actual ‘reforms’, but are usually instead the result of either organic growth, opening up of a new discipline or some limited-scale rearrangement of existing units within just a part of the lower organisational levels of a university, for example if the research centres (RCe) of a single faculty (F) are rearranged. Still, such rearrangements can result from contingent factors just like in the case of larger reforms. Of the remaining larger-scale reforms, the ‘levels above’

type reforms are one additional clear category (see 5.2.7 for details). Still, for most other remaining larger-scale reforms, the research data does not offer any explanation of why they have occurred, just the occurred changes. Even as this is the case, I can distinguish some general features of how such changes occur. It seems that regarding the attributes of units of the universities' professional organisation, a unit's discipline is normally much 'sturdier' than a unit's type category. It is considerably more common to change an existing unit's type category than it is to change its discipline, because the professional operators of an existing unit normally do not change their disciplines easily, even as it might not matter to them whether they are doing their research in a college (C), centre (Ce), school (S) or a research institute (RI). As the only normal ways to change such professionals are coercive in nature, many organisational reforms change the names and unit categories of existing units, or regroup them within the existing organisational structures, rather than actually reform them or their attributed disciplines internally. There are several cases in which some research units, for instance in the Spanish universities, changed their unit category as many as four times during the study period, while constantly maintaining their original discipline or having only minor adjustments to it.

In organisational reforms, it is thus more common to adjust unit terminology, change the unit categories of existing units and regroup existing structures than it is to formulate new units out of the old ones with mixed disciplinary contexts and identities, which would create a more fundamental reform and possibly be reflected also in actual functional changes inside and among those units and structures. The creation of totally new units happens mostly by dividing existing units that have grown large organically, so that the new divisions are connected to the parent unit both discipline- and identity-wise. The total abolition of existing units is quite difficult and almost never happens (as is also the case with universities). Instead, those units that for any reason are to become redundant for the larger organisation, are merged or reformed as parts of other units with compatible disciplines or functions, but not abolished. Hence, they just change their rationale and identity to again fit the demands of the larger organisation. In addition to what has already been stated about the prevalence of the different kinds of mergers and divisions in universities affiliated with the four HES models, the universities' HES model affiliation does not seem to affect their mergers, divisions or reforms in any systematic way.

5.4.3 The Governing Organs and Governance Structures of the Universities in the Data

My data also contain information on the governance model-related structures and decision-making organs of each of the European universities in the data. However, *this information is not always nearly as precise as it is for the organisation unit categories*. For some universities and data years, just the names of the most essential governing bodies, authorities and officials are mentioned; others include in-depth

descriptions of the exact composition and the principles of internal assembly of also the various consultative bodies and committees. In the Mintzbergian view, a clear majority of such elements of a university's governance at the institutional level belong to the strategic apex part of the organisation, while a few might belong also to the technostructure part. As mentioned in 3.1, *the strategic apex has 'intricacy', meaning the nature and complexity of the governing organs and governance of that organisation*. For universities, the governance structures have been created mostly by filiation and copying from older and more prestigious paragon, as elaborated in 4.2.6. Nowadays they are reformed and developed through changes in their respective national HESs, again evidence of the fact that the environment and power relationships as contingent factors shape the internal structures of universities.

As the governance organs and structures, that is the bodies, authorities and officials found in the strategic apices of the universities, are quite diverse and exhibit influences coming from national HESs and other non-university organisations, they are hard to classify in a coherent and precise way. However, I find the classification developed by Estermann and Nokkala (2009, 12–13) to be most suitable for this: the two main types of governance structures are *dual* and *unitary*, depending on the number of central decision-making bodies within a university. In my data the roles and responsibilities of these bodies are often explained in great detail, although there is also considerable variation among the universities on this. *Most universities have a dual governance structure: comprising a board or a council (rather limited in size) and a senate (although terminology varies considerably, often a wider body, including the representatives of the various groups of the academic community of staff and students), with some type of division of power between them. The board can also be called an executive committee, while the senate might also be an assembly, delegation, court, convent, collegium, consistorium or congregation. Often, but not always, the wider body focusses on 'academic' matters dealing with education and research only, while the more concise body handles financial and other more 'general', long-term and strategic matters with a kind of primary decision-making power. In other instances, one of these two bodies mostly has only a consultative role. Sometimes there is even a third body, like a board of trustees, with a more limited supervisory or an auditing role on the university's finances. Alternatively, a minority of universities in my data have a unitary governance structure of only one main decision-making body, which is then most often called either a senate or a council, but may also be called something else. This single body is then responsible for all major decisions. In the data for some universities, there is also limited information on the governance structures of the units of their main structures at the U-1 level, such as faculty (F) councils, but these are too sporadic to be analysed at all in a comprehensive way.*

Another important element within the governance structures of universities, also raised by Estermann and Nokkala (ibid., 13; see also Estermann et al. 2011, 27), is whether the governing bodies, regardless of

being dual or unitary, also comprise university-external members or stakeholders, and how these are selected, either by the university itself, by an external body or authority, or partially by both. In my data, in dual governance structures, the external members may have a majority or may even all be external in one of the two governing bodies, but this is almost never the case in unitary governance structures. On the other hand, in the case of some universities and some years, the primary decision-making power in dual governance structures lies with the body comprising of internal members only, whereas the body with external members simultaneously holds a purely consultative role. However, the information on the governance organs and structures in the strategic apices of universities in the data is mostly too diffuse and complex in nature to produce illustrative long-term development trends or indexes from it at the population level. Still, four general overall observations can be made.

Firstly, it would seem that *the governance structures of universities are more stable than their organisation unit structures*: though both exhibit constant gradual changes in their details, organisational structures are fundamentally reformed much more often than governance structures are. For universities not involved in major total mergers or total divisions, which would explain more major reforms also in their strategic apices, fundamental reforms of governance structures are in fact rare, and normally do not occur more than once per university even during a five-decade study period.

Secondly, even though *external members have been a part of the governing bodies* of some universities – especially the private ones – through the study period from the 1960s onwards, *a clear trend of both their introduction at some point and their increasing numbers are visible*, especially during the 21st century, and regardless of the HES model they are affiliated with. The process also seems to follow a pattern in which the external members are added into the universities' governance organs which previously had none, but once introduced, they are usually never again entirely removed from those organs. Thus, my findings are compatible with those of Hansen et al. (2019, 562–567), who demonstrate in their analysis of the universities of the Nordic countries that the managerial accountability mechanisms in the universities' governance structures and internal hierarchies seem in the last two decades, to different degrees, to have been strengthened in all countries studied and that appointed instead of elected academic leaders have been introduced to many or even all levels of the universities' organisation. These strengthened accountability demands have gone hand in hand with the universities' increasing formal institutional autonomy, thus balancing accountability and trust in the universities' power relationships.

Thirdly, the data demonstrate that during the study period, *while the average number of representatives included in the governance organs has declined and the organs have become less collegial in nature, several dual governance structures have at some point become unitary governance structures*, but

normally not the other way around. From a structure-adapting contingent factor point of view, this is the first clear evidence of a unified organisational development trend of decreasing complexity in the universities of the data, and thus a sign of possible convergence development in universities, although the reforms of the governance structures are most often induced from the national HES level above the universities. I will return to this in 5.6.

Fourthly, it would appear that *the intricacy of a university's governance bodies and structures in its strategic apex is not directly connected with the organisational structures of the other parts of its professional organisation*, other than in some of the most venerable ancient universities. The Oxbridge twins seem to have simultaneously both some of the most complex sets of governance organs, authorities and officials, as well as some of the most complex unit configurations in their professional organisation, especially in comparison to their organisation size. It could be claimed that also the composition of the governance bodies – or even the insight and agenda of individual people nominated to them – can make a difference when decisions regarding the organisational structures of the university are decided. However, even if this would be so, from the data cannot be found any recurrent patterns of this; there is no direct significant effect at work here. My data contains examples of both universities with simple governance structures and organs combined with a complex organisation of academic units, and vice versa, complex governance structures and organs combined with a simple organisation of academic units. There is naturally another type of connection, which is a direct result of the implementation of the governance model to the lower levels. For example, in 1962, as *Univerzitet Novi Sad* (the university of Novi Sad) has faculty councils as a part of its governance model, there are also just seven such councils to match an organisational structure of seven faculties (7F). But there is nothing of a contingent nature in such a consistent truism. Even as the contingent factors of the environment – either promoting or discouraging change in organisational structures – have their prime effect through the strategic apex (see 5.4.4 for details), the intricacies and internal organisation of that strategic apex do not seem to affect the nature of that effect, or at least not in any systematic way, that would be visible in the data.

5.4.4 Remarks on the Data Relative to the Contingent Factors and Mintzberg's Hypotheses

As described in 2.3, Mintzberg has developed 16 hypotheses of organisations' structural effectiveness, which describe in detail how organisations typically function and what type of organisational attribute-interdependencies exist. Even though these hypotheses are broad generalisations, and my data mostly does not have factual information on the environmental contingent factors in relation to the developing organisational structures of universities, a few of them still have relevance when compared with the findings of my research. I will present only those five hypotheses that do have some relevance to my data

and research task. I will keep the numbering of the hypotheses consistent with what Mintzberg has written. For those more interested, all of the hypotheses and their detailed description can be found from the work of Mintzberg (1979, 219–292). Out of the contingent factors, hypotheses 1 to 4 deal with *age* and *size*; hypotheses 5 to 8 deal with the *technical system* of operation; hypotheses 9 to 13 deal with the attributes of the *environment*, and hypotheses 14 to 16 deal with *power relationships*.

The first and second contingent factors are age and size, and they are relevant in the case of universities as among some of the oldest and largest organisations in existence. Mintzberg's hypotheses affiliated with age and size and relevant to my data are: 2. *Structure reflects the age of founding of the industry*. This is indeed the case with all universities in the data, since their contemporary faculty, college and other unit structures clearly still mimic their medieval paragons (see also 4.2.5). As even the youngest universities most often get their organisational structures through filiation from older paragons, all universities can indeed be seen as an 'old' type of organisation, in which the venerable age of the oldest universities also discourages organisational change for the younger ones. 3. *The larger the organisation, the more elaborate its structure – that is, the more specialised its tasks, the more differentiated its units, and the more developed its administrative component*. In comparison to my data, this hypothesis is ambivalent: on the one hand, as size itself gradually also produces new structures as a part of the organisations of many universities (see 5.2), it is a fact that most of the largest universities are also some of the structurally most complicated, and correspondingly, most of the smallest have also the simplest organisational structures. On the other hand, however, this connection is by no means linear in the data: there are indeed some small universities with elaborate structures and large universities with relatively condensed structures (see also 5.3.2 and 5.4.1). To provide examples, *Eötvös Loránd Tudományegyetem* (the Eötvös Lóránd University Budapest) in 1993 had a student population of 8674 and an academic staff of 1429, but still boasts 157 units of professional organisation at four levels, while *Universitat de Barcelona* (the University of Barcelona) in the same year had an eight-fold more massive student population of 69 635 and twice the academic staff of 3075, but still just 37 units of professional organisation at three levels. Furthermore, there are universities which have reformed their organisational structures to a considerably more or less elaborate state without corresponding changes in size. For instance, *Helsingin yliopisto* (the University of Helsinki), which from 2003 to 2013 remained about the same size (combined student and academic staff total moved just from 43 855 to 42 900) and maintained three levels of professional organisation, while the number of units at those levels were drastically reduced to just about half, from 95 to 48 through internal organisational reforms. (Ibid., 227–248.)

The third contingent factor is the technical system of operation that organisations use to do their work. This factor especially concerns the operating core, which in the professional bureaucracy type of

organisation (like universities) is the key part of the organisation. Among the professionals manning the operating core and carrying out the scholarly tasks of education and research – something we might call ‘academic work’ – the academic autonomy of these tasks is important, even as this gets various practical implementations in different disciplines, like if we compare the ‘laboratory’ sciences with the ‘human’ sciences. Still, this academic work adhering to the principles of academic autonomy can be considered as the universities’ technical system of operation, which also *de facto* discourages most types of organisational change, as described in 2.4.2 and 2.4.4. Also, the most recent, 21st century ‘levels above’ type of reforms found in the data could be interpreted as an attempt by the operators of the strategic apices to circumvent this technical system-based resistance of the operating core. Mintzberg’s hypotheses affiliated with the technical system are not relevant to my data. (Ibid., 249–266.)

The fourth contingent factor is the attributes of the environment of the organisations. According to Mintzberg, for most of the time, the universities’ environment is typically *stable, complex, market-diversified* and *non-hostile*, and this combination of the attributes of the environment leads to some of the most bureaucratic and decentralised organisational structures in existence; universities and general hospitals are mentioned as examples. These four attributes discourage organisational change, as for instance the stable organisations of the universities of the Nordic countries demonstrate (see 5.3.3 and 5.3.6). However, during periods when the first attribute changes from *stable* to *dynamic* or the fourth attribute from *non-hostile* to *hostile*, these act as a contingent factor promoting organisational change. The massification pressures of the 1960s and 1970s faced by most universities are also a prime example of the contingent effects of a dynamic environment in producing more structures and units to the universities’ organisation (see 5.2 and 5.3.4). In turn, the economic depression related public sector hardships and the NPM-type policies of the 1980s and 1990s are correspondingly examples of the contingent effects of a dynamic environment in reducing structures and units from the universities (see 5.2.3 and 5.3.4). Mintzberg’s hypothesis affiliated with environment and relevant to my data is: 9. *The more dynamic the environment, the more organic the structure*. This also holds well for the universities in the data, since many of their major reforms have occurred just because a stable environment has rapidly changed to a dynamic one, making it necessary for the universities to adapt quickly to the new situation. For example, as the Russian universities’ environment and HES changed rapidly from the stable stagnation conditions of the last decades of the Soviet Union to the very dynamic, even chaotic conditions of the newly born Russian Federation, this resulted in unprecedented organic changes in the organisational structures of universities that had remained mostly unchanged even for decades (see 4.5.5, 5.2.3 and 5.3.5 for reference). Outside the data, the cited examples of New York University in the 1960s and Aston University in the 1980s (see 2.5.2) are also striking examples of this. (Ibid., 267–287.)

The fifth contingent factor is power relationships of the organisation. It is clearly also a major factor for the development of the universities, whose organisational structures are in many occurrences shaped by the change of political regimes, other power-related actions or by the external societal forces' increased influence on the governing bodies of the universities (see 5.3.3, 5.3.4 and 5.3.5 for examples). Also, the European integration with its wide array of joint policies, programs and developments (see 4.5.7 for details), as well as the aspirations for greater multidisciplinary, are among the power-related contingent factors shaping the universities' organisational structures. Mintzberg's hypotheses affiliated with power and relevant to my data are: 14. *The greater the external control of the organisation, the more centralised and formalised its structure.* Compared with universities, this hypothesis deals with autonomy, which is lower for those universities that are under external state or other control, as proved already by the 19th century Napoleonic national French university model presented in 4.4.1. Even as this has to do with things included in the data like the number of external members in the governing bodies of the universities or the selection method of the rectorate or equivalent, unfortunately the data do not make it possible to evaluate the level of external control of each university in a meaningful way. Still, if the NPM-type and other similar policy developments of the late 1980s and 1990s (see 4.5.6) and *the 'levels above' type of reforms usual of the 2000s and 2010s* (see 5.2.7) which are often externally induced, *are seen as 'centralising' the organisation from above* (even as the 'levels above' reforms *de facto* mostly produce also a simultaneous 'decentralising' effect at the lower organisational levels and/or by increasing the number of those levels by one) this hypothesis finds support also from the data. 16. *Fashion favours the structure of the day (and of the culture), sometimes even when inappropriate.* Even as this hypothesis cannot be compared with my data as such, the data do demonstrate evidence that as soon as a university indulges in an organisational structure reform major enough to replace its existing U-1 level main structure unit category type with another type, that occurrence highly increases the propensity of this happening again before the next decade and data year of the study period. In other words, *those universities which have once been reformed 'away' from their original organisational structure model, are far more likely to be reformed successively again in the future.* Even as it is shown that no form of organisation is proof against failure or that no universal success recipe in 'how to organise' is ever going to emerge (as noted in 4.6), this does not seem to prevent politicians, consultants and administrators make believe that it might be so with the 'next prescription'. To cite an example outside the data, Patomäki (2009, 40–41) describes the RMIT University in Melbourne (my translation): 'The RMIT organisation has been reformed time after time, and only weak traces of the academic disciplines, departments or faculties remain. There are motley 'schools', 'centres', 'institutes' and 'portfolios', where all disciplines have been mixed up many times over. ... And when the finances of the university go into disrepair, the number of academic staff is blithely cut by one fifth. 'Unproductive' or in other ways cumbersome departments are abolished, and business consultants are hired to redesign the

university.’ However, this does not mean that a fashionable structure as such would be inappropriate. Instead citing Mintzberg, it is more justified to say that when new structures come along, they are appropriate for some organisations, but not for others. (Mintzberg 1979, 288–296.)

It is the conclusion of Mintzberg (ibid., 287, 296–297) that the environmental variables can have a profound effect on structure, often overriding those of age, size and technical system. Thus, while the other factors may be paramount in stable environments, dynamic environments seem to drive the structure to an organic state no matter what its age, size or technical system. Likewise, complex conditions seem to require decentralisation, no matter what other contingency factors are present. Furthermore, the contingent factors have various effects at different levels of the organisational structure: age and size have their prime effect at the middle line and a significant effect both at the strategic apex and operating core levels; technical system has its prime effect at the operating core level and a selective effect both at the middle line and strategic apex levels; environment has its prime effect at the strategic apex level, significant effect at the middle line level and a selective effect at the operating core level; while power has only a selective effect on all levels. *Looking at the universities, everything stated above makes perfect sense, as the academic professionals in the operating core stand by their autonomy as a technical system, while the leaders of the strategic apex mostly take into account the demands of the environment, as it describes the boundary conditions of the organisation, to which the organisation must always also be responsive to, at least in the strategic apex and upper levels of the middle line.* This is in line also with the conclusion by Rekilä (2006, 212–219) on the universities’ steering relationships with the state and the markets: the universities’ leaders at the institutions’ top levels must first and foremost respond to the demands of their external environment to secure strategic resources, while at the lower levels, their work may remain almost invisible amidst the persistent demands of the academic professionals for more scientific autonomy and industrial peace. Still, the ‘selective’ effect of environment on the operating core means that the professionals themselves are susceptible to the effects of their own environment as well, that mostly being the intellectual international scholarly community, which also spreads and transplants ideas concerning the new ways to organise the organisational structures of HEIs. I will return to the organisation-shaping effects of the contingent factors in universities with my conclusions in 6.1.

5.5 Population Level Findings on the Development of University Organisations

In order to provide empirical insight into the theoretical convergence versus divergence claims discussion, I will now move on to analyse my research data at the universities’ sample population level, utilising the population ecology approach (see 2.2.4), in order to observe the overall long-term development and changes of the size of their academic staff and students, the shape and dispersal of their unit

configurations, and the overall differentiation of their organisational structures as a combination of the previous two (for the definitions of size, shape, dispersal and differentiation, see 3.1.1).

5.5.1 Findings on the Size of the University Organisations in the Data

In addition to the universities' unit category descriptions, organisational levels, history, governance forms and other attributed information, the research data also contains more numeric information on each of the universities. More precisely, for each there is data on at least their student and academic staff numbers, mostly also with the sub-categories of these. Since these figures are also about the only available and commensurate way to compare the size of totally different universities operating in various HESs as well as distinct economic and cultural environments, I chose these figures as the basis of the evaluation of the universities' sizes and their long-term development. The number of students includes students at all degree levels and also in external categories. It averages 19 860 students and ranges from a minimum of 90 at *Institut Universitaire International de Luxembourg* (the International University Institute of Luxembourg) in 1993, through a median of 14 270 at *Teknillinen Korkeakoulu* (the Helsinki University of Technology (Espoo)) in 2003, to a maximum of 178 901 at *İstanbul Üniversitesi* (the University of Istanbul) in 2013. The number of staff, however, is limited to just academic staff, that is those whose responsibilities are directly involved with the tasks of education and/or research, because they match the professional organisation parts of the universities' organisation, while the technical and administrative staff, mostly operating in the support staff and technostucture parts of the organisation, have intentionally been left out. Of course, it must be noted that the number of staff have not always been counted precisely the same way for all universities or like in the case of borderline technical staff who support research functions in laboratories (L) or similar units. Still, the meaning of the term *academic staff* is clear and jointly understood throughout Europe, and is respectively recorded in the data. It represents the total numbers of employed academic staff, both full- and part-time, and listed as full-time equivalents (FTE) just on the few cases when the actual total employee number was simply not available in the data. Also, the employed postgraduate students have not been counted as belonging to the academic staff, but they have been counted as students. The average number of academic staff in the universities in the data is 1581 and ranges from a minimum of 15 at *Institut Universitaire International de Luxembourg* (the International University Institute of Luxembourg) in 1993, through a median of at 1134 in *Universitatea de Stat din Moldova (Chişinău)* (the Moldova State University (*Chişinău*)) in 2013, to a maximum of 16 808 at the University of London in 2013 – though it must be noted that, during phases of the study period, this federal university also recognised certain teachers and units from selected other HEIs as 'affiliate' academic parts of its own organisation, which are then included in its numbers during those phases, even though such an affiliation is *de facto* loose.

As elaborated in 3.2, even as the data from the various source materials are otherwise consistent and represent the editions or years 1962, 1974, 1983, 1993, 2003 and 2013, for most universities affiliated with the British HES model, the data for 1962 and 1983 have been replaced with data from 1961 and 1985 respectively, due to the different publication schedule of the source material. Also, for some individual universities and individual years, a single data point may deviate by up to two years in comparison with the normal set of data years. In addition, data points were missing from the source material and not recoverable from anywhere else in only nine cases: the number of academic staff was missing from *Belorusskij Gosudarstvennyj Universitet im. V. I. Lenina* (the Byelorussian State University) in 1962, *Université de Paris-Sorbonne (Paris IV)* (the University of Paris IV) in 1974, *Université Paris-Nord* (the University of Paris-Nord (XIII)) in 1974, *Kišinevskij Gosudarstvennyj Universitet* (the Kishinev State University) in 1962, *L'vovskij Ordena Lenina Gosudarstvennyj Universitet im. Ivana Franko* (the Lvov State University) in 1974 and 1983, and *Užgorodskij Gosudarstvennyj Universitet* (the Uzhgorod State University) in 1974 and 1983. In all these cases, a compensatory approximate figure was derived from the number of students at these universities in the same data years, using the ratio between students and academic staff for the closest available data year.

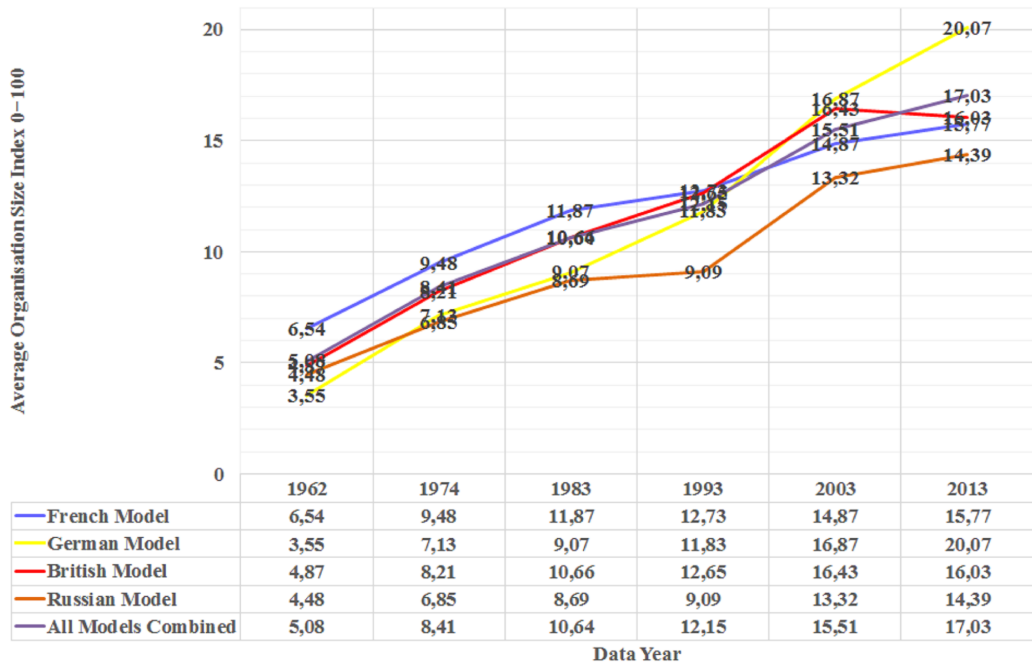


Figure 56. The organisation size index averages of all the universities in data and per their HES model affiliation.

In order to enable a commensurate overall comparison of *the sizes of the universities*, for each university and for each of the data years, *a single numeric organisation size value has been calculated by summing the university's student and academic staff numbers. These values have then been converted into index figures from 0 to 100 by scaling each individual value by dividing them by the single highest value across all universities and all data years, and multiplying the result by 100.* Hence the largest university (in the data year when it is at its largest) was accorded a value of 100, to which other values of all universities and in all data years are relative to. As a result, the sizes and their development for all universities, and per the affiliated HES models, are presented in Figure 56.

Figure 56 demonstrates that *the average size of all universities in the data has grown from 5.08 in 1962 to 17.03 in 2013, so it has multiplied by a factor of about 3.4.* This shows strong overall organic growth of European universities through the five-decade study period. When compared with the fact that the number of all universities in Europe in the period had quintupled and the number of internal academic units of universities had tripled (see 5.2), it provides evidence that *the average size of those units had grown, but modestly.* Looking at the various HES models, the overall development also seems quite balanced, even though there are also major differences. *The German HES model affiliated universities have grown the most*, starting from the lowest figure in 1962 of 3.55 and ending with the highest in 2013 of 20.77, so it has been multiplied by a factor of about 5.7 during the entire study period. On the other hand, *the French HES model affiliated universities during the same period have grown the least*, starting from the highest figure in 1962 of 6.54 and ending with the second lowest in 2013 of 15.77, so it has multiplied by a factor of about 2.4. There are only two notable exceptions to the overall trend of constant growth. The Russian HES model affiliated universities grew particularly slowly between 1983 and 1993, which is not surprising, considering the stagnation phases of the Soviet-influenced HESs (see 5.3.5). The other exception, and the only time when any of these numbers have shown a decrease instead of increase, is the British HES model affiliated universities from 2003 and 2013. However, instead of an actual trend, this dip was caused by developments in the two largest of the British HES model affiliated universities in the data: the reorganisations of the federal University of London, and the concurrent atrophy and near abolition of the confederate University of Wales (see 5.3.4 for details).

5.5.2 Findings on the Shape and Dispersal of the University Organisations in the Data

Turning to organisational shape and unit dispersal, the research data contain precise information on the number and level location of academic units belonging to the professional organisation of the universities. Particularly interesting and representational is the development in the number of organisational levels of the universities, which is compiled to Figure 57.

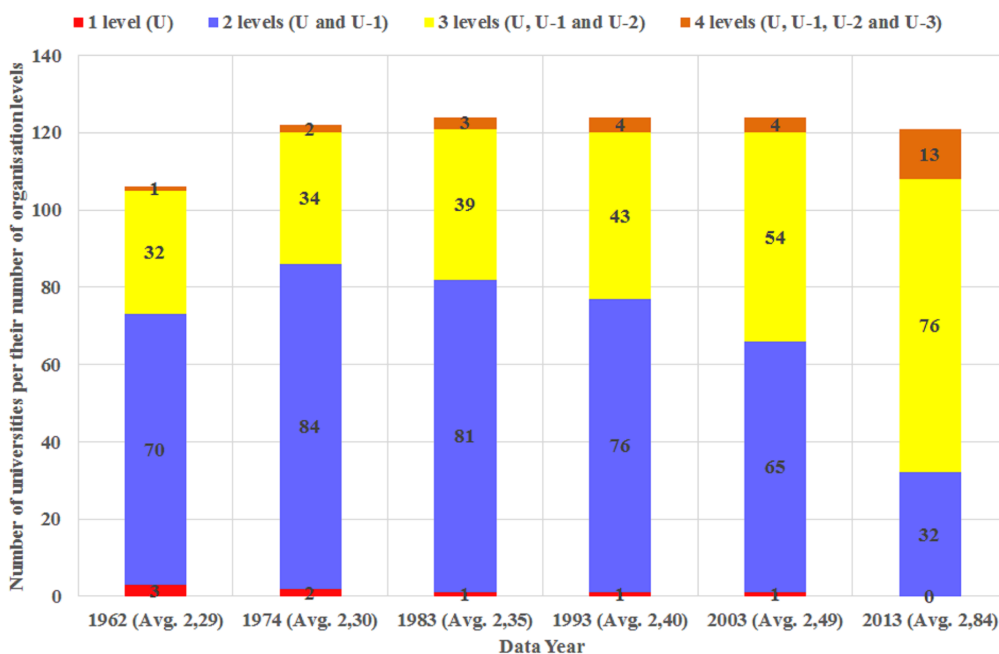


Figure 57. The number of universities in the data per their number of organisation levels (the calculated average number of organisation levels per data year is marked after the data year).

Figure 57 clearly demonstrates that *while the overall majority of universities has throughout the study period had either two or three levels of professional organisation, the average number has constantly grown and the balance has gradually tipped in favour of three*, while the speed of growth has even accelerated in the 21st century. Simultaneously, the single-level cases have withered away completely while the number of four-level cases has constantly increased. It is then not surprising either that the more organisation levels a university has, the larger they are on the average, even as this connection between the number of levels and organisation size is in no way linear.

Looking at the organisational shape of universities affiliated with different HES models, they have various forms of recurring organisational structures and configuration shapes, which have persisted amidst the changes of organisation even through their accelerating rate of occurrence in the 21st century. When the general form of the professional organisation is drawn as a Mintzbergian organigram, the universities affiliated with of each of the HES models represent an average shape, even though it must be noted that these shapes, as coarse typologies, simplify the variation of real cases affiliated with each HES model. The shapes are compiled as Figure 58. The ‘width’ dimension of the organigram depicts the average dispersal value, that is the average number of units at each horizontal level of the operating core, while the ‘height’ dimension depicts the average number of vertical organisation levels of the middle line. Figure 58

demonstrates that, *if an essential distinction is made between the width and height dimensions of the organigram configurations respectively, the French HES model shape is wide in width and average in height, the German HES model shape narrow in width and tall in height, the British HES model shape average in width and tall in height, the Soviet Russian HES model shape average in width and flat in height, and finally the post-Soviet Russian HES model shape average in both width and height.* These dimensions are also compiled as Table 7.

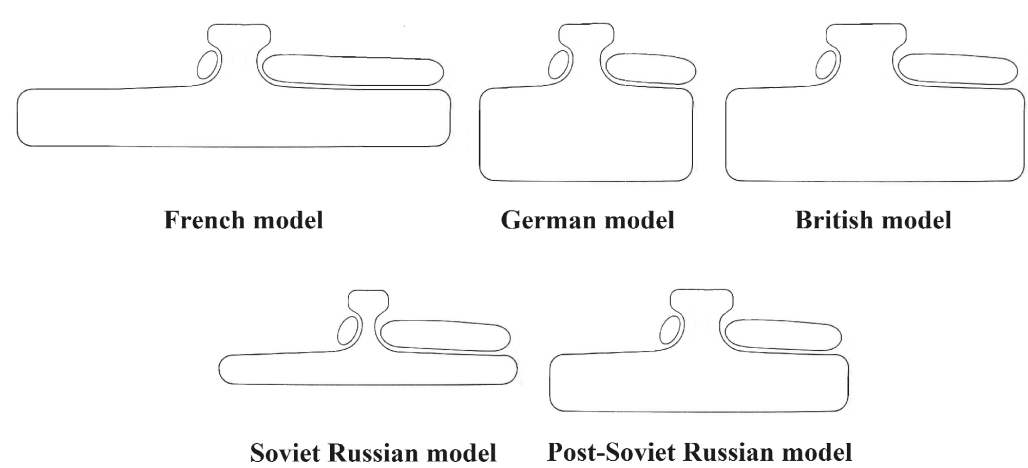


Figure 58. The typology organigram shapes of Mintzberg forms of the universities affiliated with each of the HES models in the data.

		Width of the professional organisation:		
		Wide	Average	Narrow
Height of the professional organisation:	Tall		British model	German model
	Average	French model	Post-Soviet Russian model	
	Flat		Soviet Russian model	

Table 7. The typology professional organisation shapes of Mintzbergian forms of the universities affiliated with the HES models in the data.

The number of academic units belonging to the professional organisation of a university denotes the level of total dispersal of its organisational structures as a numerical value, regardless of their location in the (U), U-1, U-2 and U-3 organisational levels. This figure averages 54.84 units and ranges from a minimum of 1 in the few single-level university cases where the only unit equals the entire university (U), through

a median of 27, shared by 14 universities in the data, to a maximum of 705 in the University of London in 1985. In order to enable a commensurate overall unit dispersal comparison of all universities, for each university and for each of the data years, *the total number of academic units in all the organisation levels are combined into a single numeric unit dispersal value. These values have then been converted into index figures from 0 to 100 by scaling each individual value by dividing them by the single highest value across all universities and all data years, and multiplying the result by 100.* Hence the unit-wise most dispersed university (in the year when it was at its most dispersed) gets a value of 100, to which all other values of all universities and in all data years are relative to. As a result, the unit dispersal averages for all universities, and per the affiliated HES models, are presented in Figure 59.

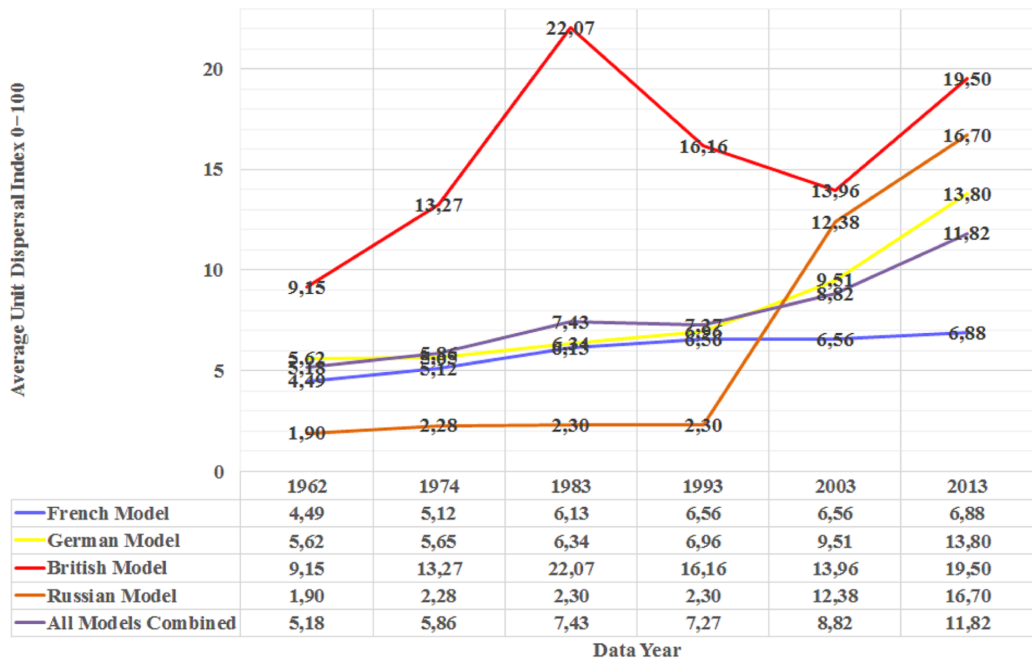


Figure 59. The unit dispersal index averages of all the universities in data and per their HES model affiliation.

Figure 59 demonstrates that *the overall dispersal development of the universities has been one of balanced, moderate growth, with notable exceptions.* The averages grow fastest in the 21st century. Looking at the HES models, *the unit dispersal is the most balanced in French and German HES model affiliated universities,* with a difference in the latter starting to grow faster after 1993. *The dual character of the Russian HES model affiliated universities before and after of the abolition of the Soviet systems is abundantly clear:* until 1993, the stagnated Soviet Russian universities’ organisation is ‘flattest’ among all in the data, which then transforms very rapidly into a post-Soviet steep increase of unit dispersal. In

comparison with the other HES models, *the average numbers of the British HES model affiliated universities seem out of place*, which in a way they also are: even as these universities at times have ‘double’ U-1 level structures of both faculties (F) and colleges (C), and they also have had a strong organisational unit growth trend especially in the early decades of the study period, the average unit dispersal figures are much higher than in any of the other HES models, because the group of just twelve British HES model affiliated universities include in their ranks two federals: the immense University of London and the later confederate University of Wales, as well as the two medieval, large and highly dispersed Oxbrige universities. Regardless of this, the remaining British HES model affiliated universities are relatively dispersed and ‘tall’ in comparison with other HES models, even as their U-1 level main structure is usually not as ‘wide’ as with the universities affiliated with the French HES model.

5.5.3 Findings on the Differentiation of the University Organisations in the Data

It is time to consider the overall differentiation of the organisational structures of universities, as a combination of the aforementioned member size value and dispersal shape value. When both the average organisation size index (see 5.5.1) and the average unit dispersal index (see 5.5.2) are observed together for each of the universities in the data, a more thorough and comprehensive perception of the differentiation of the universities as a (sample) population is formed. This is achieved by placing all the individual universities’ average size index and dispersal index values into a series of scatter diagrams as a function of time, each representing one data year. The affiliated HES models of the universities as sub-populations and the linear development trends of their differentiation can also be observed at the same time. Starting from 1962 and onwards to 2013, these have been compiled in Figures 60 to 65.

Figure 60 demonstrates that early on, the entire population of universities is mostly quite concentrated in the bottom left corner of the scatter diagram. Most individual German HES model affiliated universities are relatively high on the unit dispersal index but low on the organisation size index. Some of the French HES model affiliated universities are relatively very high on the organisation size index compared to all other universities, with the still undivided *Université de Paris* (the University of Paris) being the largest of these with an index value of over 40. With the exceptions of the university of London – also the most dispersed university in the data with a unit dispersal index value of over 40 – in the British HES model and *Moskovskij Ordena Lenina i Ordena Trudovogo Krasnogo Znameni Gosudarstvennyj Universitet im. M. V. Lomonosova* (the Moscow State University) in the Russian HES model, all other British and Russian HES models’ universities form highly condensed piles at this point.

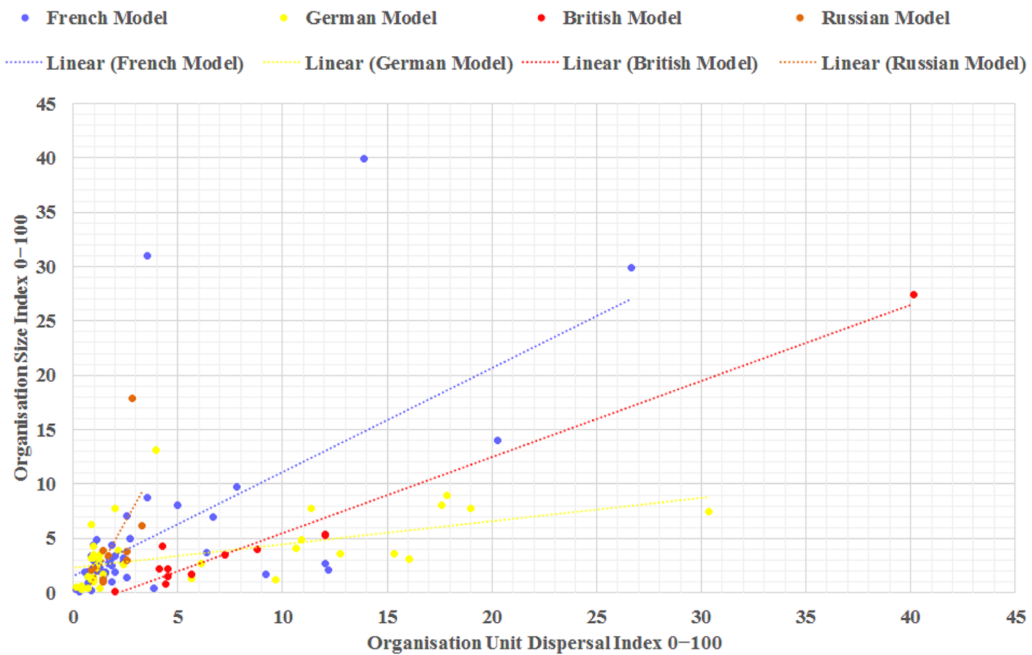


Figure 60. The University population of the data in 1962 placed according to their relative organisational size and unit dispersal positions (the linear trend lines depict the overall differentiation development trends of all universities affiliated with each particular HES model).

Analysing the scatter diagrams, as groups those universities that are relatively higher on the organisation size index than on the unit dispersal index I will hereinafter call *organisation size oriented* and those with relatively higher on the unit dispersal index than on the organisation size index I will call *unit dispersal oriented*. The groups of universities that are clearly not oriented in either of these preceding ways, but are instead about average in relation to both the organisation size and unit dispersal indexes, I will call *balanced*. Hence, in Figure 60, the German HES model affiliated universities are heavily dispersal oriented and the British HES model affiliated universities somewhat unit dispersal oriented, while the Russian HES model affiliated universities are heavily organisation size oriented. The French HES model affiliated universities as a group remain balanced between organisation size and unit dispersal.

Coming to 1974, Figure 61 demonstrates first an increase in the overall differentiation of the university population, and many individual universities going higher on both the organisation size index and the unit dispersal index. With its federal structure, the University of London affiliated with the British HES model has grown dispersal-wise into a category of its own with a unit dispersal index value of over 57, however with *Università degli Studi di Roma* (the University of Rome) affiliated with the French HES model matching and slightly even surpassing it in sheer size, with an organisation size index value of over 51.

The German HES model affiliated universities remain heavily unit dispersal oriented and the Russian HES model affiliated universities heavily organisation size oriented. The French HES model affiliated universities as a group also remain balanced between organisation size and unit dispersal, while the British HES model affiliated universities become less unit dispersal oriented and a more balanced group.

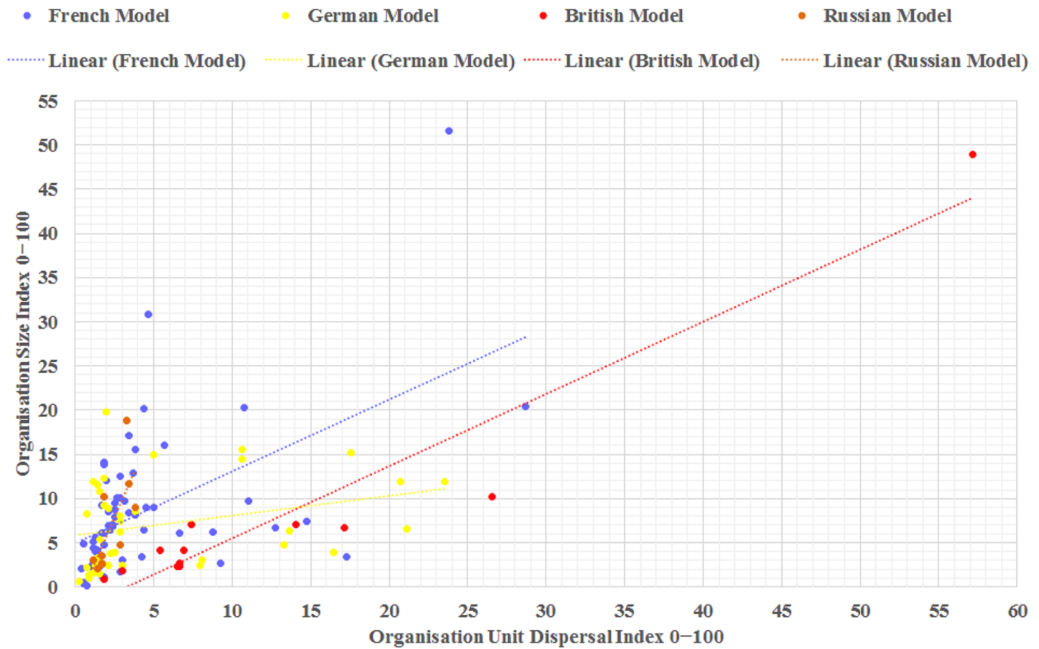


Figure 61. The University population of the data in 1974 placed according to their relative organisational size and unit dispersal positions (the linear trend lines depict the overall differentiation development trends of all universities affiliated with each particular HES model).

Coming to 1983, Figure 62 demonstrates even further increase in the overall differentiation of the universities. The aforementioned universities of London (unit dispersal index 100) and Rome (organisation size index over 87) become even more distant from all others in the population, while the second federal university, the University of Wales also separates itself from the group on the unit dispersal index with a value of over 47. Regarding models, as a group *the German HES model affiliated universities on average have now started to grow faster in size and become less unit dispersal oriented.* The Russian HES model affiliated universities remain heavily organisation size oriented, while the French HES model affiliated universities now also became slightly organisation size oriented for the first time. However, *the British HES model affiliated universities 'turn back' from a balanced into a slightly unit dispersal oriented as a group.*

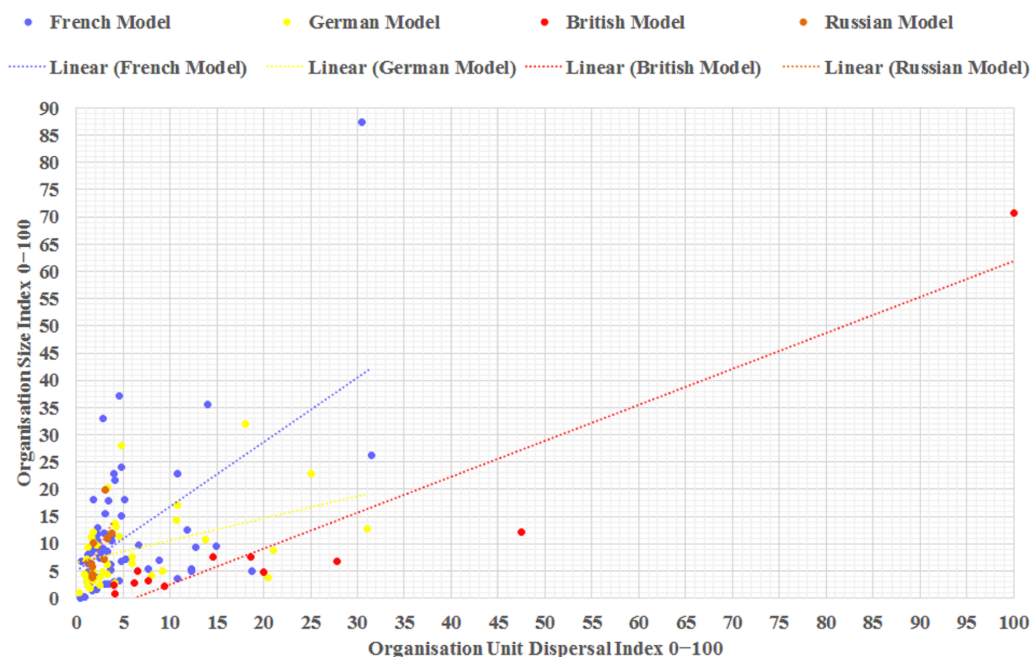


Figure 62. The University population of the data in 1983 placed according to their relative organisational size and unit dispersal positions (the linear trend lines depict the overall differentiation development trends of all universities affiliated with each particular HES model).

In 1993, Figure 63 demonstrates no more increase in the overall differentiation of the universities. Even as the universities of Rome and London still both grew in their organisation size (with index values of over 93 and 80 respectively), the latter quickly became about half as dispersed as a decade earlier, because of divisions, reforms and a changed HES policy. At the same time, the *Sveučilište u Zagrebu* (the University of Zagreb) affiliated with the French HES model has grown as the second most dispersed university (with a unit dispersal index of over 44), also surpassing the federal University of Wales in this respect. Even as the Soviet HESs have been abolished, the incipient change in the Russian HES model affiliated universities have still not made a difference and as a group they remain heavily organisation size oriented. Also, the French HES model affiliated universities remain slightly organisation size oriented and the German HES model affiliated universities slightly unit dispersal oriented. However, the British HES model affiliated universities again become more balanced as a group.

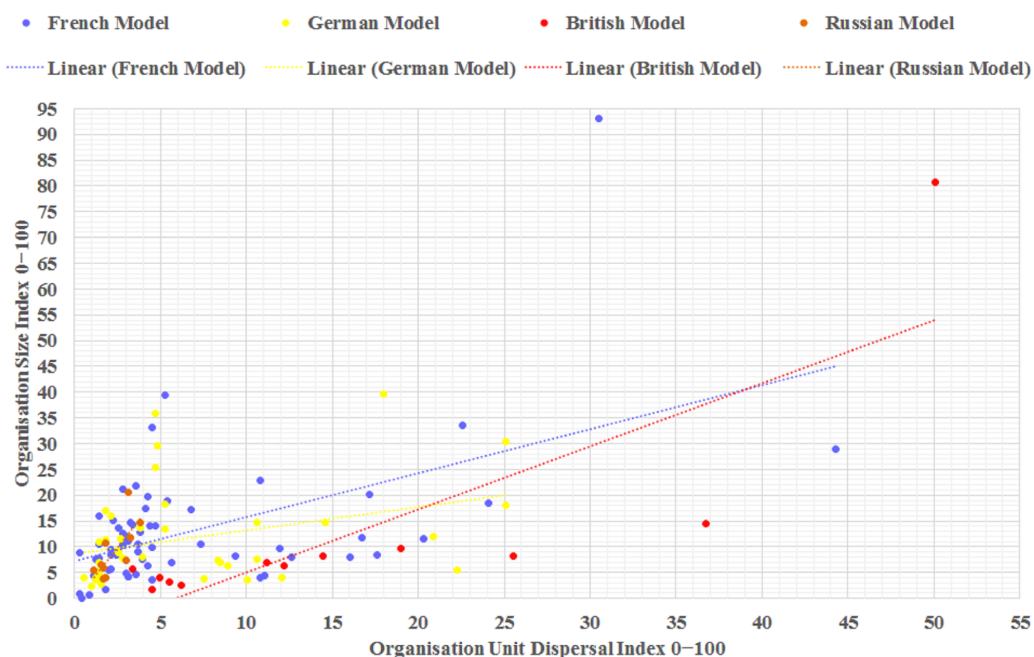


Figure 63. The University population of the data in 1993 placed according to their relative organisational size and unit dispersal positions (the linear trend lines depict the overall differentiation development trends of all universities affiliated with each particular HES model).

Coming to 2003, many things have changed. In Figure 64, the overall differentiation has again increased, and several universities, regardless of HES model affiliation, have either substantially grown in size or have become unit-wise markedly more dispersed in the last decade. *Univerzita Karlova v Praze* (the Charles University in Prague) affiliated with the German HES model has become the most dispersed university with a unit dispersal index of over 58, while the abovementioned University of Zagreb and *Sankt-Petersburgskij Gosudarstvennyj Universitet* (the Saint-Petersburg State University) affiliated with the Russian HES model have also become more diverse than the University of London. While the universities of London and Rome are still the two largest in size, *Università degli Studi di Bologna* (the University of Bologna) affiliated with the French HES model and *Ethnikon kai Kapodistriakon Panepistimion Athinon* (the National and Kapodistrian University of Athens) affiliated with the German HES model have appeared in the category of massive universities with an organisation size index of greater than 60. Regarding models, a turnabout is finally visible in the post-Soviet Russian HES model affiliated universities, which have become heavily unit dispersal oriented. *The German HES model affiliated universities have again turned to heavily unit dispersal oriented as a group, while the British HES model affiliated universities have turned slightly organisation size oriented as a group for the first time.* The French HES model affiliated universities remain slightly organisation size oriented as a group.

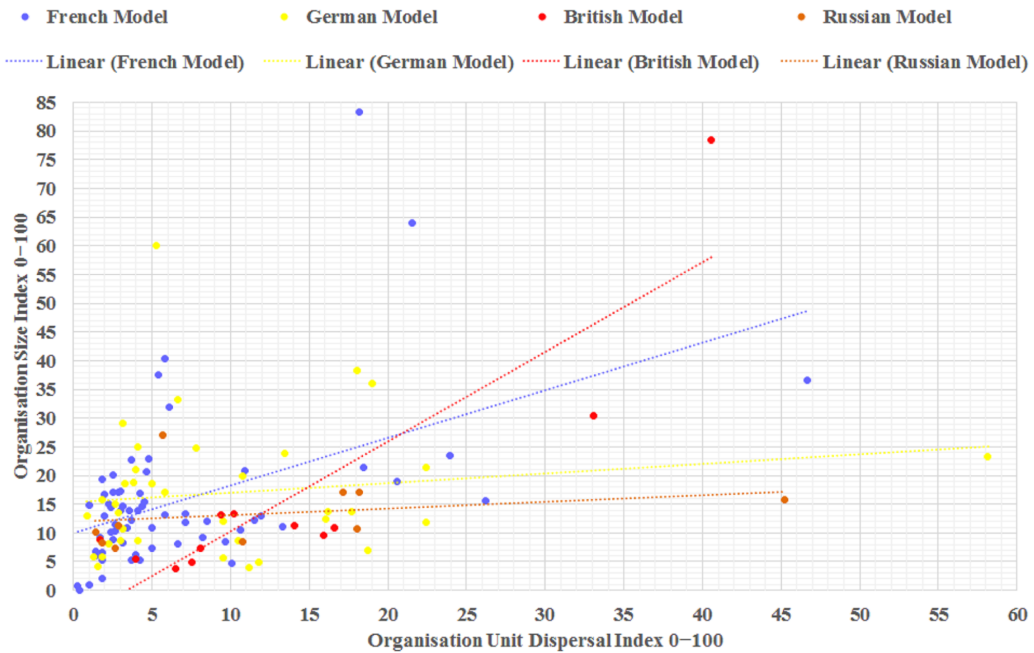


Figure 64. The University population of the data in 2003 placed according to their relative organisational size and unit dispersal positions (the linear trend lines depict the overall differentiation development trends of all universities affiliated with each particular HES model).

Finally, Figure 65 demonstrates the widest overall differentiation of the universities as a population in 2013. The four most dispersed universities are the same: London, Zagreb, Prague and Saint-Petersburg, but in a different order and the leading two with greatly increased unit dispersal values. The former fifth, the confederate University of Wales, has been all but abolished entirely. The largest university is the rapidly grown *İstanbul Üniversitesi* (the University of Istanbul) with an organisation size index of 100, with the more familiar universities of London and Rome behind it. *The Russian HES model affiliated universities have become even more heavily unit dispersal oriented, while both the British HES model and the French HES model affiliated universities have again turned to slightly unit dispersal oriented. The German HES model affiliated universities have for the first time turned balanced as a group.*

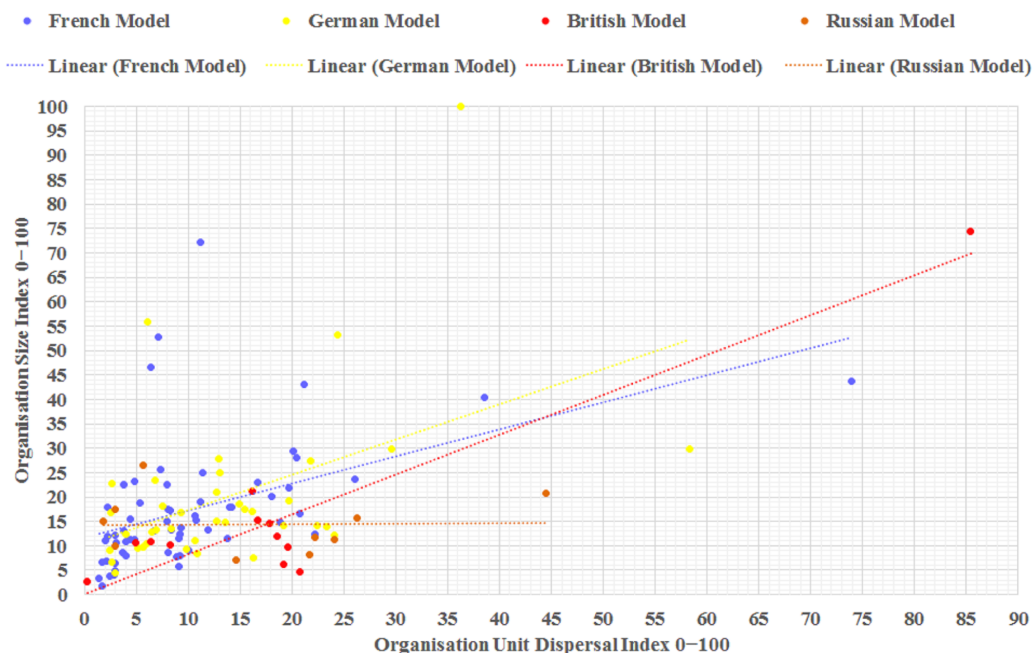


Figure 65. The University population of the data in 2013 placed according to their relative organisational size and unit dispersal positions (the linear trend lines depict the overall differentiation development trends of all universities affiliated with each particular HES model).

To summarise the historical long-term organisational development of universities in the data as groups affiliated with different HES models, I came to the following findings. The universities affiliated with the French HES model are, on average, balanced between organisation size and unit dispersal both in 1962 and 1974, followed by a slight orientation towards organisation size from 1983 to 2003, and ending up with a slight orientation towards unit dispersal in 2013. The universities affiliated with the German HES model are on average heavily oriented towards unit dispersal both in 1962 and 1974, followed with a slight orientation towards unit dispersal in 1983 and 1993, going again for a heavier unit dispersal in 2003, and ending with a balance between organisation size and unit dispersal in 2013. On average, the universities affiliated with the British HES model alternate between a slight unit dispersal orientation in 1962, balanced in 1974, slight unit dispersal orientation in 1983, balanced in 1993, slight organisation size orientation in 2003 and ending with a slight unit dispersal orientation in 2013. Finally, the universities affiliated with the Russian HES model on average during the Soviet period were heavily oriented towards organisation size from 1962 through 1993, and heavily oriented towards unit dispersal in both 2003 and 2013. These findings are condensed and compiled as Table 8.

Organisational orientation of universities per their affiliated HES models	Data year:					
	1962	1974	1983	1993	2003	2013
Organisation size, heavy	Russian	Russian	Russian	Russian		
Organisation size, slight			French	French	French British	
Balanced	French	French British		British		German
Unit dispersal, slight	British		German British	German		French British
Unit dispersal, heavy	German	German			German Russian	Russian

Table 8. The historical development of organisational orientation of universities as groups in the data per their affiliated HES models.

To put these findings together, I can conclude that *in the long run of the five decades, comparing from beginning to end, there is an increase of differentiation* as the combination of the member size value and dispersal shape value *of the organisational structures of universities, but in between there are considerable fluctuations especially during the 1980s and 1990s*. These patterns are a result of the developments in the British and Russian HES model affiliated universities, for the others show a fairly stable pattern of gradually increasing differentiation. I can also conclude that historically the universities affiliated with each of the HES models as groups developed in quite diverse ways, which do not converge. This holds, even as it can be claimed that towards the end of my half-century study period, the unit dispersal orientation of the entire population of universities is, on average, emphasised while the organisation size orientation is not. In other words, this claim means that on average, in the 21st century, *the universities' organisational unit dispersal (based on the number of units in their professional organisation) grows faster than their organisational size (based on their number of students and academic staff)*. Even so, in my judgement *this is not evidence of convergence at the universities' institutional (HEI or meso) level, since neither the unit dispersal phenomena nor changes in size dynamics follow any uniform patterns at that level of organisation*. However, the same development could still be regarded as convergence at the one step higher HES (or macro) level, because within many of the national HESs and university groups affiliated with some of the HES models, the organisational development of whole HEIs is not random but instead follows joint patterns of national HES policies and reforms, even as the simultaneous development of the internal units of those HEIs does not. Also, *the*

'levels above' reforms do occur in many universities mostly just in the last two decades of the study period, regardless of their affiliated HES model, which could be regarded as convergence at the HES level. But since this unit-dispersal-increasing reform at the HEI level replaces some unit categories with other categories with diverse results and occurs in universities with various sizes and a varying number of organisation levels, it cannot be regarded as convergence at the HEI level.

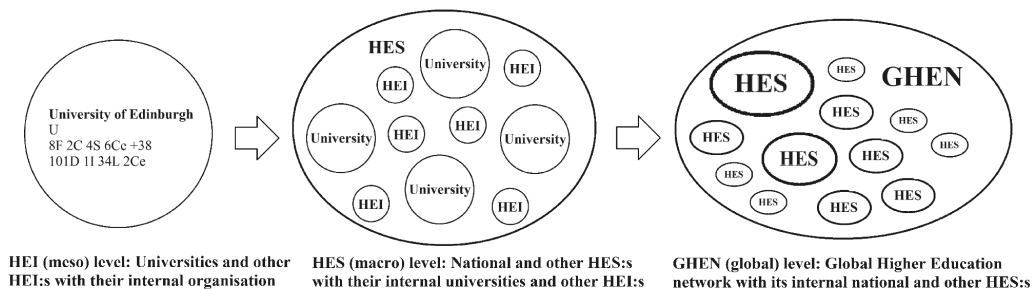
5.6 The Convergence Versus Divergence Claims at the HEI, HES and GHEN Levels

I can finally arrive at conclusions regarding the manifold discussions on convergence versus divergence claims of the organisations of higher education, HEIs and HESs as elaborated in 2.5 and all its subsections. The question of whether the development of the organisational structures of universities demonstrate convergence or divergence depends on the precise definitions of the concepts involved (see 3.1.1), so as phenomena concerning the development of the organisational structures, *integration* versus *differentiation* must be separated from *convergence* versus *divergence*.

The first pair of concepts describes the quantity changes of a combined organisation size value and shape dispersal value (see 5.5.3): the smaller the organisation member size and the more compact the unit dispersal shape, the more integrated the organisational structures are. And vice versa: the larger the organisation member size and the more dispersed the unit dispersal shape, the more differentiated the organisational structures are. A decreasing value of differentiation thus denotes integrating organisational structures and an increasing value of differentiation denotes differentiating organisational structures. Looking at the overall size and unit dispersal of all universities in the data as a population, as Figure 56 in 5.5.1 and Figure 59 in 5.5.3 demonstrate, *the average organisation size of universities through the five-decade study period differentiated at various rates, while the average unit dispersal of universities as an indicator of their shape volume also differentiated between all data years except from 1983 to 1993, when it slightly integrated.*

In this work focussing on the organisational structure aspects of *convergence* versus *divergence* only, the second pair of concepts describes the relative direction of development of at least two juxtaposed organisational structures being compared to one another as a function of time. *Convergence thus denotes that the juxtaposed organisational structures of two or more universities being compared with one another are mutually developing in the same direction, while divergence denotes that the same compared juxtaposed organisational structures are mutually developing in different directions.* Another way to express the same is to say that *convergence is a change towards parallel states and configurations of*

organisation, while divergence is a change towards different states and configurations of organisation in the juxtaposed organisational structures of universities being compared. For instance, if two universities being compared have during the same study period both replaced their former U-1 level main structures – regardless of their former unit composition – with a new main structure of schools (S), their organisational structures can be said to converge. However, if a university replaced its former main structure with one composed of schools (S) while another university simultaneously ‘levels above’ reformed to a main structure of divisions (Div) and moved its existing faculties (F) from the U-1 to the U-2 level, their organisational structures of these universities can be said to diverge.



Firstly, at the university or HEI level, which my research data are primarily concerned, as described at the

end of 5.5.3, among the organisational structures of universities, *a pattern of almost exclusive differentiation* (i.e. an increasing number of units of universities) *through the study period can be found, with temporary and localised periods of integration* (i.e. a decreasing number of units of universities) *especially during the 1980s and 1990s*. Looking at convergence versus divergence developments, there is mostly no development towards parallel states whatsoever in the way the organisational unit structures are developed, with the minor exceptions of the average number of organisation levels and units at those levels slowly but constantly increasing and the slight joint emphasis towards unit dispersal orientation and away from organisation size orientation during the last two decades of the study period. Other than these, and since the dispersal of the organisational unit structures of the universities' professional organisations do not follow any uniform patterns, it can be concluded that *the organisational structures of European universities demonstrate constant divergence towards different states and configurations of organisation, and have thus been diverging through the entire half-century study period*.

Secondly, even though my primary data contained a 40.3% non-random sample of the existing universities in 1962, which then gradually shrinks to a 8.32% sample of the existing universities in 2013, also the total number of European universities and their development have been presented from the same data sources and data years according to the same criteria and can thus be considered to be an extension of my data for evaluating the HES level developments. At the HES level, as described in Table 5 and Table 6 in 5.1, the primary IHU/CUY/WHED data sources clearly demonstrate that *the total number of universities (and other HEIs) has been constantly growing* – even if at changing rates at different time periods – and as such, *the development of universities as a total population in Europe demonstrates constant differentiation* (i.e. an increasing number of HEIs in HESs) *throughout the study period*.

Looking only at the sample of universities belonging to my data and their convergence versus divergence developments inside their national HESs, both developments can be observed simultaneously at the HES level. This also means that the claim of Europeanisation having changed the dominant higher education development paradigm from diversity to convergence, discussed in 4.5.7, seems to be premature or at least imprecise, if not actually untrue. Instead, the organisational development of universities as groups based on their HES model affiliations – which overlap with their HES grouping – demonstrates both individual and uniform, as well as HES specific and HES model specific patterns, as the organisational development of universities follows joint patterns in their organisational size and unit dispersal shape orientations, as Table 8 in 5.1.1 demonstrates. These developments at *the HES level can thus be regarded as demonstrating both convergence and divergence, but focussing on different aspects of the organisational structures: the HESs, composed of universities and other HEIs, are simultaneously developing both towards mutually different states and configurations of organisation* (in that their HEIs

are organisation-wise developing into their own directions, both individually and as groups based on their HES affiliations and HES model affiliations), *and towards parallel states and configurations of organisation* (in that the HESs are in the long run of the study period all becoming composed of only a constantly differentiating, i.e. growing number of universities and other HEIs; in that their patterns of dual governance structures of universities are gradually being replaced with more and more unitary governance structures, as elaborated in 5.4.3; and finally in that the 21st century trend of the ‘levels above’ reforms are being subjected to a growing number of their universities the same way, regardless of their affiliated HESs or HES models, even as the implementation of these reforms simultaneously diverges the HEI level below the HES level).

Thirdly, at the GHEN level, even though my data or research problem do not concern it directly, the primary IHU/CUY/WHED data sources reveal that *the HESs also demonstrate at least clear differentiation throughout the study period*: just within Europe, calculated from the same data sources, the number of independent nation states having national HESs with universities of their own has grown gradually from 30 in 1962 to 46 in 2013, in addition to which two international HESs (including their own universities) have emerged: one for the EU and the other for the International Maritime Organisation. However, the data do not make it directly possible to elaborate further the convergence versus divergence developments of HESs at the GHEN level empirically.

Nevertheless, the theoretical discussion and established research sources particularly focussed at the GHEN level seem to suggest primarily patterns towards parallel states and thus convergence at this level and in the 21st century: *it is just the HESs as parts of the global international system of science and higher education that feel the converging effects of globalization, ranking lists and ranking systems* described in 2.5.1. Furthermore, as more and more European countries have moved from a unitary HES (composed of equal-status HEIs only) to a binary HES (composed of HEIs with two or more status categories), as described in 2.5.2, this can also be categorised as the HESs developing towards parallel states and thus converging at the GHEN level, even though it might have simultaneously also diverged the HES level below by producing additional and new types of HEIs (representing development towards different states and configurations of organisation) into those HESs.

It can thus be concluded that based on the empirical findings from my data on well-established European universities, *the complex and seemingly contradictory theoretical convergence versus divergence discussion of universities and other HEIs can be clarified by consciously parsing the observed integration versus differentiation and convergence versus divergence developments to the three organisational levels concerning higher education*. In these HEI, HES and GHEN levels, both

integration and differentiation as well as convergence and divergence are conceivable, but they are likely exhibited at different levels and occur in different ways, as follows:

1. At the HEI (meso) level, composed of the universities' internal professional organisations, *the organisation structures have differentiated through the entire study period, with only temporary and localised periods of integration* during the 1980s and 1990s. Despite a few lean and unifying trends, *the organisational structures of universities have also mostly diverged through the whole study period.*

2. At the HES (macro) level, composed of individual universities and other HEIs, *the HEIs have constantly increased in number and thus differentiated through the entire study period.* With certain reservations, *both convergence and divergence developments can be observed* in the data sample of the HESs' basic population of universities through the study period, *but focussed on different aspects of the organisational structures.* Divergence is found in that *the HEIs are developing into their own directions,* both individually and as groups based on their HES affiliations and HES model affiliations. Convergence is found in that *all the HESs are becoming composed of only constantly differentiating universities and other HEI:s,* in that *the universities' dual governance structures are being replaced with more and more unitary governance structures,* and in that *the 21st century 'levels above' reform trend is being subjected* to a growing number of universities *the same way, regardless of their affiliated HESs or HES models.*

3. On the GHEN (global) level, composed of national (and a few international) HESs, *the HESs have constantly increased in number and thus differentiated through the entire study period.* Beyond the fact that more and more European HESs have under the study period become binary instead of unitary in their internal HEI composition (which would suggest convergence), *the convergence versus divergence developments cannot be empirically observed with the research data alone,* and this was not included in the research problem in the first place. The theoretical discussion and other research sources on the GHEN level postulate mostly convergence developments at the 21st century.

6 Conclusions: The Research Results and Their Importance for Theory and Practice

In this final chapter I will summarise the results of my analysis presented so far and discuss their meaning for both theory and practice. I will also list topics for further study and finally, in an epilogue, present my interpretation of the implications of the results for any future university reformers.

6.1 A Summary of the Essential Results and Findings

The universities in Europe as a population have developed historically through filiation, the emulation of the organisational structures of pre-existing and more prestigious paragon universities: from their medieval Bolognese and Parisian roots, following the early modern pan-European university model and through the influence of four national university models of the 19th century, into a modern but historically continuous, yet diverse institution of scientific research and higher education. This development was elaborated in detail in chapter 4, and condensed in Figure 9 in 4.6, based on a thorough overview of existing historical research. In the 20th century and beyond, the universities and their organisational structures are affiliated with four HES models (the French, the German, the British and the Russian) and the national HESs of their native European countries, and can develop also through transplantation and conscious design of their organisational structures, both at the HEI and HES levels (see 4.5.2). The development of the organisational structures of well-established European universities, during the half-century study period from 1962 to 2013, was described in detail in chapter 5, and based on an organic contextual comparison with juxtaposition of the primary longitudinal data. The comparison has studied the organisational structures of universities from multiple organisational levels with juxtaposition: at the meso level of HEIs, individual universities and their internal subunits, their level and quality configurations, unit categories and attributes (see 5.2); and at the macro level of HESs, the national HESs representing their historically affiliated HES models (see 5.3) and their universities as whole HEIs (see 5.4), also belonging to a larger European population (see 5.5) of other HEIs. The national (and two international) European HESs – together with the HESs from other parts of the world – also make up another, global level of higher education (see 5.6). The mutual relations of these levels are condensed in Figure 66 in 5.6. The meso and macro levels are also to a limited extent interchangeable in that reforms, mergers and divisions, some organisational structures can sometimes change the level they exist in, between these two (see 2.4.3, 4.6 and 5.4.2).

The organisational concepts of Mintzberg dealing with organisational structure have been used as the

criteria of the empirical comparison, and the essential results are now summarised in relation to these criteria. All are relative to the organisational structures of European universities, meaning that out of a basic population of HEIs, only institutions that also met both the criteria of being universities and being located in Europe at the start of the study period in the year 1962, were included. These have also been grouped by their respective affiliated HES models in order to make comparisons in sensible and historically persistent organisational structure subgroups. *The criteria of the comparison were the following: size, shape, dispersal, differentiation versus integration, and divergence versus convergence* (for precise definitions of these, see 3.1.1) of the organisational structures of universities. The results are summarised in the same order. In addition, also the *modern 20th century national HES models* were used as a criterion and a way to both augment and group the results obtained through the other criteria.

Starting with the size of the universities, as measured by the number of student and academic staff members belonging to a university, the comparison demonstrates that *the average size of all universities in the data has through the study period multiplied by a factor of 3.4, which shows strong overall growth* (see 5.5.1). At the same time the number of all universities in Europe has quintupled and the number of internal academic units of universities has tripled (see 5.2), so also the average size of those units has grown. Out of the four HES models, the overall development has been quite balanced, yet the German HES model affiliated universities have grown the most and the French HES model affiliated universities have grown the least.

Moving on to the configuration shape of the academic units of universities, *while the overall majority of universities has throughout the study period had either two or three levels of academic organisational structures, the average number has constantly grown and in the 21st century, the speed has accelerated and the balance has tipped in favour of three* (see 5.5.2). The more organisation levels a university has, also larger the university is in size, even as this connection is in no way linear. Looking at the universities' affiliated HES models, they have configuration shapes that have persisted amidst the changes of organisation even through their accelerating rate of occurrence in the 21st century. Drawn as Mintzbergian organigrams, *the French HES model shape is wide in width and average in height, the German HES model shape narrow in width and tall in height, the British HES model shape average in width and tall in height, the Soviet Russian HES model shape average in width and flat in height, and finally the post-Soviet Russian HES model shape average in both width and height.*

The key finding concerning unit dispersal, as measured by the organisational diversity represented by the total number of academic units of the organisation structure of a university, is that the *dispersal development has been one of balanced, moderate growth, with notable exceptions*, and the numeric

dispersal averages growing fastest in the 21st century (see 5.5.2). Looking at the different HES models, the dispersal development is most balanced in French HES model and German HES model affiliated universities, while *the British HES model affiliated universities have the highest absolute dispersal numbers persisting through the study period*, and they demonstrate strong unit dispersal growth trend in the early decades of the study period, which is however counteracted in the last two decades of the 20th century. *The dual character of unit dispersal of the Russian HES model affiliated universities, before and after of the abolition of the Soviet systems is clear*: they move very rapidly from the lowest unit dispersal numbers into a most steep increase of unit dispersal, respectively.

Looking at the 20th century national HES model groups as a separate criterion, and the universities of the data as an organisational population composed of corresponding sub-groups at the population level, *within the overall expansion of the units of the universities' organisation during the study period, the development between the affiliated follower groups of the four HES models has been generally balanced*. The decrease in the number of units in the British HES model affiliated universities from 1983 to 2003 and the stagnation in the number of units in the Russian HES model affiliated universities from 1974 to 1993 make up minor deviations to the general trend. *The French HES model affiliated universities are more 'U-1 level heavy' than the universities affiliated with the other HES models*, and in comparison they also demonstrate greater organisational complexities and fragmented HES applications, where new units are just added on to the existing system rather than ever rethinking the whole structure of the system. Thus, *the internal organisational structures of the French HES model affiliated universities demonstrate the most chaotic patterns and dynamics to be found in the data*. Then again, *the German HES model affiliated universities are on average structurally very balanced* so that at the U-2 level, there are always at least twice the number of units there are at the U-1 level. *In comparison, the British HES model affiliated universities are organisation-wise most different to one another as a group, despite their shared evolution history with an intense departmentalisation trend from 1962 to 1983 and its reversal from 1983 onwards*. They also include the only two federal or confederate universities of the entire data set. *The Russian HES model affiliated universities as a group develop from simple internal organisational structures of just two organisational levels in the last three decades of the Soviet Union, to a Post-Soviet period of intense departmentalisation*, with the number of U-2 level units growing very rapidly.

Going into differentiation vs. integration, there are three levels of higher education to consider. At the meso (HEI) level, the overall differentiation of a university's organisational structures, as measured by the combination of the size value and dispersal value, which may either integrate towards a more compact or differentiate towards a more dispersed unit dispersal shape, the comparison demonstrates that *the*

organisational structures of European universities have gradually differentiated through the entire study period, but with temporary and localised periods of also integration, especially during the 1980s and 1990s, and in the universities affiliated with both the British HES model and Russian HES model (see 5.5.3). This differentiation has occurred through organic growth, mergers, divisions and various other types of reforms, so I also agree with the claim of Bonaccorsi & Daraio (2007, 425) discussed in 4.5.1. In reforms, it is more common to adjust terminology, change unit categories and regroup existing structures than it is to formulate new units out of the old with mixed disciplinary contexts and identities, which would create a more fundamental reform. At the macro (HES) level, the HEIs, as both the population of and the organisational structures of the HESs, have constantly differentiated through the study period, as the number and population of universities and other HEIs has been constantly growing (see 5.6). At the global (GHEN) level, the HESs as the organisational structures of the GHEN, have also constantly differentiated through the study period, as new (inter)national HESs have constantly appeared (see 5.6).

Finally, concerning convergence vs. divergence, the same three levels of higher education need to be considered. When two or more organisational structures are juxtaposed and compared with each other, these may *converge* towards parallel states and configurations of organisation or *diverge* towards different states and configurations of organisation. At the meso (HEI) level, despite a few minor exceptions of the reverse, *the organisational structures of universities demonstrate constant divergence towards different states and configurations of organisation through the study period* (see 5.6). At the macro (HES) level, with reservations, *both convergence and divergence developments can be observed in the HESs' population of universities through the study period, but focussed on different aspects of their organisational structures: the HESs are simultaneously developing both towards mutually different states and configurations of organisation, in that their HEIs are organisation-wise developing into their own directions, both individually and as groups based on their HES affiliations and HES model affiliations, and towards parallel states and configurations of organisation, in that the HESs are in the long run all becoming composed of only a population of constantly differentiating number of universities and other HEIs; in that their patterns of dual governance structures of universities are gradually being replaced with more and more unitary governance structures (see 5.4.3); and finally in that the 21st century 'levels above' reforms (see 5.2.7) are being subjected to a growing number of their universities the same way, regardless of the universities' affiliated HESs or HES models (see 5.6). At the global (GHEN) level of HESs, the data do not make it possible to evaluate convergence versus divergence developments at the global level beyond the (convergence-suggesting) fact that an increasing number of European HESs have become binary instead of unitary in their HEI composition in the study period.*

As elaborated in 5.4.4, out of the hypotheses of Mintzberg on how the contingent factors of age and size, technical system, environment and power relationships either promote or discourage change in the structures of organisations, five have relevance also for the universities in my research data. The others concern things about which the data does not contain information. Mintzberg's pivotal lesson about universities, which *the research data also supports*, is *that venerable age, large size and stable environmental conditions allow the universities to develop slowly and steadily towards some of the most complex and dispersed organisational structures in overall existence*. On the other hand, *the 'overriding' variables of environments turned dynamic can rapidly drive even the most stable, old and large structures to an organic state*, as the cases of the confederate University of Wales and the universities of the former East Germany in my data demonstrate. Such contingent factors of the environment seem to be able to change even the medieval-originating, stable organisational structures of universities to something else entirely: borrowed or transplanted, 'levels above' reformed or redesigned according to the structural fads and fashions, and at accelerating rate, especially in the last two decades of the study period. Still, the total abolition of either existing universities or even their units almost never happens. Instead, units that become redundant to the larger organisation are merged or reformed as parts of other units or change their rationale and identity to fit the larger organisation. The 'levels above' reforms also emerge just in the 21st century: 14 universities in the data have gone through such a reform in the 21st century, and only one before. In this reform, new 'levels above' units are placed at the university's 'highest' organisation level that has multiple units (the U-1 level), while the existing units of that level are either 'moved down' in the organisational structure, regrouped or heavily reformed into or as the new 'levels above' units (for details, see 5.2.7). This reform and the 'regrouping' unit categories it molds to the organisational structures of the affected universities are also found regardless of affiliated HES models, although none of the mentioned 14 universities in the data is affiliated with the Russian HES model. The emergence of the 'levels above' reforms might be signs and portents of a raising trend of more major future changes in the public management and organising of universities.

In addition to accelerating the rate of change affecting the universities' organisational structures, in the 2000s and more in the 2010s, the effects of those changes have diversified. Even as the organisational size and unit dispersal of universities mostly go hand in hand, and while their complex interdependencies have been previously studied in organisational research in the Aston studies (see 2.2.3 for reference) and the like, it is my conclusion that *at least in the well-established European universities of the data, an organisation's size does not necessitate any minimum or maximum number of organisational unit structures* (see 5.4.4), and *through the study period there have been also small universities with elaborate organisational structures and large universities with simple structures*.

6.2 Discussion of the Results

I consider my realisation that the theoretical *convergence versus divergence discussion concerning the organisations of higher education is clarified by consciously parsing the claimed phenomena to the three organisational (meso, macro and global) levels of higher education*, as the essential contribution of this research to the theoretical discussion concerning higher education. Still, it must be demarcated that *my observed convergence versus divergence developments and findings can cover only the organisational structure aspects of the meso, macro (and global) levels of higher education*, whereas a large extent of the theoretical discussion on convergence versus divergence of higher education also deals with the activities of both HEIs and HESs. My data does not include information about such activities, and consequently also the conclusions must be demarcated to organisational structure only. However, it is challenging to relate these results to previous research, as empirical studies dealing with the organisational structures of universities (or other HEIs) are hard to come by (see 3.1.3). This being said, especially research dealing with the reforms and mergers of the universities' and other HEIs' organisational structures, has become more common in recent years (cf. Harman & Harman 2003; Hogan 2005; 2012; Virtanen 2008; Kasanen et al. 2013; Kyvik and Stensaker 2013; Pinheiro et al. 2016; Huotari & Kalalahti 2017). The *large number of diverse reform, merger and division cases* that were found from my longitudinal data, *demonstrated that the previously existing concepts to classify reforms, mergers and divisions*, for example integration versus diversification mergers and takeover versus consolidation mergers (see 2.4.3 and Skodvin 1999), *were in fact in several ways insufficient* in classifying many of the actual empirical cases found. As a result, in this work *I have developed such concepts further towards an improved empirical applicability*, with total mergers versus partial mergers, total divisions versus partial divisions, and the division-merger-interchange (see 5.4.2).

The findings of my research are also in line with other research concerning issues of organisational structure (cf. Teichler 2008; Paradeise et. al. 2009a; Viljamaa et al. 2010; see also Amaral et al. 2003, 279–283), which call for new answers to the organisational debate about whether the converging versus diverging organisations of higher education leads to hybrids and increased diversity, or a globally more structured agenda and/or culture. In the light of my empirical findings on the converging and diverging organisational structures, simultaneously being a part of several organisational levels of higher education, it seems that *the developing allomorphic framework* (as elaborated in 2.5.3) *and a new way to approach the traditional divide would be compatible with my research results*, which have acted as one empirical study on these issues. I find it likely that the *universities and other HEIs* are neither becoming strictly homogeneous and isomorphic at a global level, nor are highly differentiated and polymorphic at the

local-organisational level, but *could rather be conceived as local variants, instead of different forms, of the same institutional archetype*. Furthermore, the conclusion of Vaira (2009, 151), elaborated in 2.5.4, that the HESs and the HEIs have entered a 'structuring stage' leading HESs to converge towards a unified (global) system, inside which at the same time the HEIs are becoming structurally and functionally diversified and stratified, seems entirely apposite.

Looking backwards, I think that through the various systematic comparisons with juxtaposition, and studying one and the same organisational structures of my data from many different points of view (a unit, its level, the university, its HES model, and the universities as a population), I did get interesting results and findings out of the data in abundance, regardless of their demarcations. It would have been better, had there also existed longitudinal data covering all of the 'structures in fives' five organisational parts, because it would have brought an interesting addition to the organisational profiles of the universities being compared, as probably also the support staff and technostucture parts in different universities would have varied per their size, shape and affiliated HES model. Still, had such data been included, I do not think that the results would have been altered, as the current data covered the full hierarchy of the academic units, outside which neither research nor education can occur (see 3.2.2). As this research was in essence built on the large potential of just these data, it could not have been studied at all, if that had necessitated a perfect operationalisation of a theory in the data. Instead, the potential of these data was operationalised by using the best possible theory available, even if in limited way. I must conclude that in considering and in studying the organisational structures of organisations in general, several theoretical and empirical approaches of the 1960s, 1970s and 1980s (see 2.2 with all its subsections and 2.3) had considerable rationale, analytical potential and also empirical strengths. Hence, all of them should not be forgotten or summarily labelled old-fashioned by the contemporary researchers of organisations, but instead, at least the best of these traditions should be continued and developed further in the 2020s, as they have potential to demonstrate why organisational structures really matter.

The fascinating thing about doing comparative research is to find the limitations of one's own imagination: in this case, the endless possible ways of organising the universities' structures in reality surpassed everything I could have had the imagination to invent! Such an experience widens one's horizons and reminds that reality is always far more complex and relative than the most versatile theories of any disciplines or administrative categories can encompass. Looking back at the research process, I have been in *terra incognita* – the undiscovered country, in that I chose a topic mostly out of my own pure interest in it, and one which was located in between several disciplines, borrowing something from each while not being an 'integral' part of any. As a result, I had to search for the proper data, applicable theories, research design and method for a while, as elaborated in 3.2 and its subsections. Afterwards, I

hope that the potential of this approach lies in combining a historical understanding of universities with contemporary comparative research of universities as organisations, which has only rarely been done, and as such might produce something new and original. The longitudinal comparison of organisational data has revealed new aspects of the nature and development of European universities, as the most complex and curious professional organisations – or to quote Durkheim, living things. They are!

6.3 Topics For Further Study

My research opens up diverse topics for further study. The obvious subject to start with would be to expand the historical comparison of the HES models, their HES adaptations and the universities (or other HEIs) to beyond their European cradle to cover the universities and HESs of other continents. Also, within Europe, as the population of universities has grown rapidly in recent decades, it would be important to contrast my results of mostly well-established universities only by comparing them with the organisational structures of the much younger members of the European university population: that is, those that have been founded or raised to full university status only in the most recent decades. In the spirit of organisational ecology, it would be interesting to study the organisational structures of some university and/or HEI populations in their entirety (instead of samples, even non-random ones), with their internal filiation, division and merger dynamics, in order to comprehend them better as systems with interdependencies at the HES level.

Also, it would be fascinating to compare the scope of organisational structures of existing universities with their university ranking list placement results using comprehensive ranking information as longitudinal data. As the reforms of the universities' organisations are mostly justified and rationalised by claims that they produce more optimal-sized and functionally more efficient and result-producing entities, the improving effects of such reforms on the organisational structures should also be reflected and visible in improved ranking list placements of the respective universities. A comparative study of this kind could yield whether or not features of the universities' organisational structure would in fact better enable them to adapt to their operating environments and thus improve performance in their main tasks of research and education, as measured by their ranking list placements. Such a study could produce findings on the effect the way a university's professional organisation is structured might have – if any – on its actual scientific performance, as measured by ranking schemes.

As some of the contingent factors promoting or discouraging change in university organisations are better understood (like the effects of age and size) than others (like the effects of technical system), the analyses

of observed developments should be redone with data able to operationalise the environment. Because my data could not answer many interesting questions due to their inherent characteristics, with a different type of organisational data, fascinating new research tasks and case studies could be confronted. I will present a few such topics based on the Mintzbergian contingent factor categories.

Starting with age and size, I have been fascinated by the idea presented by Scott and Davis (2007, 251), who consider it feasible that formal organisations could potentially be ‘immortal’, unlike any biological organisms. While going through the long history of the European universities since medieval times, one can see that they are a special ‘species’ of organisations indeed, as emphasised from the start of this research. As my data include 35 universities over 500 years old each, it would be interesting to study the venerable universities’ seemingly astonishing ability to adapt constantly to contingent factors and thrive from one century to the next without a danger of abolition. Alternatively, the same phenomena could be studied at the organisational structure level, because I have learned during this research process that even the non-functional units mostly never die but instead change their rationale and identity to become functional again (see 5.4.2), even as this sounds exceptional in the wide world of organisations.

Turning to environment, it would be important to study, how the developments of European integration (see 4.5.7) and the EU as an ‘international HES’ as contingent factors of the universities’ environment and power relationships have affected the universities at the level of their organisational structures. Considering that the EU has no mandate from its member countries in the field of higher education, the Bologna process and its diverse array of activities and programs has achieved enormously in the field of integrating European universities and HEIs into a joint system with many shared structures.

From the perspective of the contingent factor of the power relationships of the universities, this research has brought up the now increasingly common ‘levels above’ type of reform (see 5.2.7), where a university’s U-1 level main structure of units is replaced with something completely different, with often diverse and unintended consequences, with the exception of increasing the propensity of additional reforms in the near future. In my view, the causes and consequences of this relatively unidentified reform type would deserve attention. In particular, its effects on the organisational structures and operations of universities in the long run remain a mystery, despite which it is being used more and more. In 5.4.4 it was also considered that the ‘levels above’ reforms could be interpreted as an attempt by the operators of the strategic apices to circumvent the technical system based resistance of the operating core.

Turning back to the technical system, the organisational attributes of the internal ‘classes’ of interest groups within the university – including the academic staff of teachers and scholars, the administrators,

the students, the alumni, the support staff, the leaders of the university – at least partially coincide with the Mintzbergs ‘structures in fives’ five operational parts of the organisation. This would provide interesting research topics and settings based on the various interest groups’ diverse organisational locations in relation to the other groups and locations. Another important topic directly linked with the universities’ power relationships would be to study, how the growing inclusion of external members to the governing bodies of universities as a contingent factor has affected the universities at the level of their professional organisation. Who do they think they represent, and how? Even as this phenomenon of the external decision-makers in university governance is now familiar to nearly all university people, there is not much proper research being conducted on this subject.

To conclude, I will present a couple of topics precisely related to the nature of the organisational structures of universities themselves. The type of professional organisation ‘shapes’ of universities, based on the axes of width and height, were presented in Table 7 and Figure 58 in 5.5.2. In the real spirit of organisational ecology, this shape-determination could be taken further: are there universities somewhere in the world that would fill the currently empty side cells of Table 7 (the combinations of tall/wide, flat/wide, flat/narrow and average/narrow)? And if so, how did they develop as such? What other ways to encode complex features of organisational structures into easy and commensurable ideal types could be constructed? Finally, among the most curious organisational structures of universities were the two (con)federal universities of London and Wales, themselves composed of parts, some of which might also have an independent university status (see 5.3.4). In my view they should definitely be studied more as organisation types of higher education, since the (con)federal organisational structure, unknown to most European HESs, can bring with it both advantages and disadvantages, as the cases of the universities of London and Wales in respective order illustrate. There might be other, non-standard forms of university or other HEI organisational structures, just waiting to be found and studied!

6.4 Epilogue: Final Remarks for Future University Reformers

The results of the research could also be utilised in practice by consciously choosing from a greater set of compared structural alternatives when designing university reforms and new university organisational structures in the future. According to Flyvbjerg (2001, 3), social sciences at their best do not contribute to explanatory or predictive theory, but instead to the reflexive analysis and discussion of values and interests in society. Values and interests are at the heart of all public debates and expert discourses on HESs, which are strongly shaped by political, *a priori* value judgements: these vary with respect to the acceptability and desirability of an expansion, quality, equity, and to the extent and modes of diversity of

higher education (Teichler 2008, 350–351). According to Huisman (2009, 4), the leaders and academics of HEIs are situated in institutional contexts in which factors stemming from different coordination mechanisms push and pull them in unanticipated directions. Such poor preconditions for reforming universities should thus be improved. For Flyvbjerg (2001, 55–57, 130–133) it is vital to apply a practical value rationality – as per Aristotle’s *phronesis* – in judging who gains and who loses when universities are reformed, so that the interests of education and research can be set apart from the values and interests of other parties such as politics, nation states, regions, cities, markets and economics etc. Of course, most of these interests can often also be compatible at the same time, and are thus not necessarily in conflict with each other. Still, only in this way can it be judiciously evaluated, which reforms are in fact ‘good’ for the universities and the wider society, and based on that, what should be done in the future: which courses of action should be undertaken in reorganising and reforming universities, other HEIs and HESs. Reflecting this, and moving consciously beyond the conclusions I can justify with the analyses and data of my research, in this last epilogue subsection of chapter 6, I wish to give the following practical recommendations to any and all who might be interested in university reforms and organisational design of the future.

One should stay as imaginative as possible when designing and reforming universities, and not be constrained by the *status quo* of contemporary structures. However, this does not mean that anything goes or that imported organisational models would necessarily be good – even those borrowed from leading world-class universities – because when transplanted, in a new HES and/or new environment they operate differently and often worse than in their original environment. Reforms should neither be undertaken just for their own sake or be based on the latest management fads, because both have been shown to cause more problems than they solve in the long run. The golden rule in evaluating reforms, if any exists, is to apply the practical Flyvbjergian value rationality presented above. Even as the universities and other HEIs must be regarded as ‘only’ being organisations – albeit ones of a very specific and original type – I claim that they should be reorganised and reformed mainly only from the basis of, and benefit for, their basic tasks of research and education.

Taking into account its size based on students, academic staff and array of disciplines engaged in the research and education tasks, a university should have a sufficient number of organisation levels and a sufficient number of organisational units at those levels to structure its professional organisation, but while meeting these criteria, as few as possible of both, because any more make the organisation unnecessarily complex, unclear in form and indistinct. No benefits will arise from merging together units that do not have any actual common ground in either their disciplines or functions, while it is equally unwise to divide units with clear existing disciplinary identities. Because of clarity, it is unadvisable to

have units with the same name category to appear at several organisational levels at once, nor to represent several functions within one and the same university organisation, let alone one and the same level. Also, for reasons of clarity, units sharing the same function at the same organisational level should not have different name categories without a very special reason, nor should units sharing the same function be spread over more than one level. When wanting to inflict actual reform in the organisational structures of universities, or to solve problems of a functional nature, it is more advisable to formulate entirely new units through the mixing of existing disciplinary elements and identities than it is merely to regroup, relabel and relocate existing units, even as the former way is usually a lot harder than the latter. The 'levels above' reform concept should be used only with caution. When deemed to be absolutely necessary in order to centralise the professional organisation, it should be carried out in a way that does not simultaneously produce extra organisational levels, because this reform type *de facto* decentralises the organisation by moving the most important U-1 level main structures and other units further away to a lower level or levels, therefore diffusing the entire professional organisation, even if the aim is precisely the opposite: that of centralising it. It is most important to remember that by changing or reforming the organisational structures alone, one mostly cannot solve problems of a functional or non-structural nature within that organisation.

To conclude, I return to the purpose and the reasons (listed in 1.3) for studying the formal organisation of universities in the first place: I sincerely hope that, through this research, I have been able to provide the reader with more knowledge about the implications of organisational structures in general and especially within the realms and levels of higher education; to increase awareness of their historical nature, models of organisation and dimensions of change; to create better preconditions for the decision-making of universities' organisational reforms in the future; and also to show which sins to avoid while being engaged in the planning of such reforms. All these causes can be crystallised into a single motto, formulated by a 19th century British educator and historian Thomas Arnold: '*No one ought to meddle with the universities, who does not know them well and love them well*' (cf. Delin 1972, 316). Despite of the poetic and emotional touch inherent in this quote, I also judge it to be a most practical, rational and prudent guideline to remember and commit to memory, for any future university reformer.

References

- Aalto, Alec (1968): 'Oxbridge ja muut. Opettavaisia havaintoja Englannin korkeakoulujärjestelmästä'. In Tyynilä, Markku (ed.) (1968): *Huomenta, yliopisto. Mielipiteitä Helsingin yliopiston järjestäytyneen ylioppilaskunnan satavuotisjuhlien merkeissä*. Helsinki: Student Union of the University of Helsinki & Otava, 127–135.
- Aalto, Sari (2013): 'Opetus, sivistys ja ammatti – yliopistokoulutuksen historiallisia kehityslinjoja'. In Aalto, Sari (ed.) (2013): *Sivistysyhteisö? Puheenvuoroja yliopiston kasvatustehtävästä – Akademisk gemenskap? Tankar kring universitetets bildningsuppdrag*. Helsinki: Osakuntien yhteisvaltuuskunta – Nationernas samdelegation, 114–138.
- Aaltonen, Timo-Pekka & Heikkinen, Ari & Hämäläinen, Esa & Kauranen, Kristiina & Kinttula, Outi & Nieminen, Mika (1993): *Rahasta, karsi ja unhoita. Suomalaisen korkeakoulupolitiikan suunta 1990-luvulla. SYL-julkaisu 2/93*. Helsinki: Helsinki University Press.
- Aarveaara, Timo (2008): 'Comparative Challenge of University System Change'. In Aarveaara, Timo & Maruyama, Fumihiko (eds.) (2008): *University Reform in Finland and Japan*. Tampere: Tampere University Press, 155–162.
- Aarveaara, Timo (2012): 'The Finnish Universities in the Conflicting Demands of Autonomy and Relevance'. In Koscielnak, Cezary & Makowski, Jaroslaw (eds.) (2012): *Freedom, Equality, University*. Warsaw: Civic Insitute, 143–154.
- Aarveaara, Timo & Dobson, Ian & Elander, Camilla (2009): 'Brave New World: Higher Education Reform in Finland'. *Higher Education Management & Policy* Volume 21, Number 2/2009, 89–106.
- Aarveaara, Timo & Dobson, Ian & Wikström, Janne (2015): 'Changing Employment and Working Conditions'. In Fumasoli, Tatiana & Goastellec, Gaële & Kehm, Barbara M. (eds.) (2015): *Academic Work and Careers in Europe: Trends, Challenges, Perspectives. The Changing Academy – The Changing Academic Profession in International Comparative Perspective 12*. Cham: Springer, 95–115.
- Abazi, Alajdin & Farrington, Dennis & Huisman, Jeroen (2010): 'Globalisation, Internationalisation and Regionalisation'. In Huisman, Jeroen & Pausits, Attila (eds.) (2010): *Higher Education Management and Development. Compendium for Mangers*. Münster: Waxmann, 39–50.
- Ahola, Sakari & Mesikämnen, Jani (2003): 'Bolognan prosessin juurilla – Eurooppalaisen ulottuvuuden monet lonkerot'. In Aittola, Helena (ed.) (2003): *€KG? Eurooppa, korkeakoulutus, globalisaatio?* Jyväskylä: Jyväskylä University Press, 53–68.
- Ahonen, Pertti (1989): *Hallinto hallintana. Hallinnon teorian avaimet*. Helsinki: Valtion painatuskeskus.
- Ahonen, Pertti (2002): 'Social Aspects in the Governance of a System of Education. A Thematic Parallel Evaluation'. *Hallinnon tutkimus* Volume 21, Number 4/2002, 65–76.
- Alestalo, Marja (1995): 'Yliopisto tulosnormien kahleissa'. In Wiberg, Matti (ed.) (1995): *Yliopisto uusiksi!* Helsinki: Gaudeamus, 137–154.
- Alestalo, Marja (1996): 'Tiede-eliitin valta ja vastuu'. In Helenius, Börje & Hämäläinen, Esa & Tuunainen, Juha (eds.) (1996): *Kohti McDonald's-yliopistoa? Näkökulmia suomalaiseen korkeakoulu- ja tiedepolitiikkaan*. Helsinki: Tammi, 246–280.

Alkula, Tapani & Pöntinen, Seppo & Ylöstalo, Pekka (1994): *Sosiaalitutkimuksen kvantitatiiviset menetelmät*. Helsinki: WSOY.

Altbach, Philip G. (2002): 'Differentiation Requires Definition: The Need for Classification in Complex Academic Systems'. *International Higher Education* Number 26/2002, 2–3.

Amaral, Alberto & Fulton, Oliver & Larsen, Ingvild M. (2003): 'A Managerial Revolution?'. In Amaral, Alberto & Meek, V. Lynn & Larsen, Ingvild M. (eds.) (2003): *The Higher Education Managerial Revolution?* Dordrecht & Boston & London: Kluwer Academic Publishers, 275–296.

American Council on Education (ACE) (2001): *A Brief Guide to U.S. Higher Education*. Washington DC: ACE.

Anderson, Robert D. (1996): 'The Formation of National Elites: the British Case'. In Norrback, Märtha & Ranki, Kristiina (1996): *University and Nation. The University and the Making of the Nation in Northern Europe in the 19th and 20th Centuries*. *Studia Historica* 53. Helsinki: Finnish Historical Society, 113–124.

Anderson, Robert D. (2006): *British Universities Past and Present*. London: Hambledon Continuum.

Aniluoto, Arto (2003): *From Patrons to Partners. – Strategic Relationships of the University of Helsinki from the 17th to the 21st Century*. A paper presented in the 14th International Meeting of University Administrators (IMUA) in Kingston, Jamaica 5.–9.1.2003.

Aniluoto, Arto (2004a): "Tässähän lukee 'Helsingin' yliopisto!" – *Helsingin kaupungin ja Helsingin yliopiston keskinäisen yhteistyön synty ja sen kehittyminen kumppanuudeksi*. Master's Thesis. Helsinki: Department of Sociology, University of Helsinki. Also an electronic publication of the National Library of Finland, at <http://urn.fi/URN:NBN:fi-fe20041299>.

Aniluoto, Arto (2004b): *Helsingin kaupungin ja Helsingin yliopiston yhteistyön kehittyminen kumppanuudeksi*. Helsinki: City of Helsinki Urban Facts Study Reports 2004/5.

Aniluoto, Arto (2013): 'Yliopistojen nuorison kasvatustehtävän alkuperä'. In Aalto, Sari (ed.) (2013): *Sivistisyhteisö? Puheenvuoroja yliopiston kasvatustehtävästä – Akademisk gemenskap? Tankar kring universitetets bildningsuppdrag*. Helsinki: Osakuntien yhteisvaltuuskunta – Nationernas samdelegation, 24–41.

Aniluoto, Arto (2017): 'Yliopistollisten virkanimikkeiden värikäs eurooppalainen kirjo'. In Aalto, Sari & Nyström, Samu & Peake, Rose-Marie (eds.) (2017): *Leivoksia, kaupunkilaisia ja sivistysaatteita. Kävelyretkiä Euroopan historiaan*. Helsinki: Kirjapaja, 87–107.

Aniluoto, Arto & Henttonen, Aleksi (2001): *Leading the Way or Causing Havoc? – Student Participation in University Administration: A Case Study of the University of Helsinki*. A paper presented both in the 13th International Meeting of University Administrators (IMUA) in Helsinki, Finland 19.–23.8.2001 and in the Meeting of Rectors of Universities from Central Meridian Europe (CEMU) in Sofia, Bulgaria 23.–27.11.2001.

Aula, Pekka (1999): *Organisaation kaaos vai kaaoksen organisaatio?* Helsinki: Loki-Kirjat.

Barblan, Andris (2011): 'From the University in Europe to the Universities of Europe'. In Rüegg, Walter (ed.) (2011): *A History of the University in Europe. Volume IV: Universities since 1945*. Cambridge: Cambridge University Press, 550–574.

Bain, Olga B. (2003): *Univerity Autonomy in the Russian Federation since Perestroika. Studies in Higher Education Dissertation Series*. New York: RoutledgeFalmer.

Bauer, Marianne & Askling, Berit & Gerard Marton, Susan & Marton, Ference (1999): *Transforming Universities. Changing Patterns of Governance, Structure and Learning in Swedish Higher Education*. London: Jessica Kingsley Publishers.

Becher, Tony & Embling, Jack & Kogan, Maurice (1977): *Systems of Higher Education: United Kingdom*. New York: International Council for Educational Development (ICED).

Becher, Tony & Kogan, Maurice (1992): *Process and Structure in Higher Education. Second Edition*. London: Routledge.

Becher, Tony & Trowler, Paul R. (2001): *Academic Tribes and Territories. Second Edition*. Buckingham: The Society for Research into Higher Education (SRHE) & Open University Press.

Ben-David, Joseph (2002): *Centers of Learning. Britain, France, Germany, United States*. New Brunswick: Transaction Publishers.

Bender, Thomas (ed.) (1988): *The University and the City. From Medieval Origins to the Present*. New York: Oxford University Press.

Berg (van den), Leo & Russo, Antonio P. (2003): *The Student City: Strategic Planning for Students' Communities in EU Cities*. Rotterdam: European Institute for Comparative Urban Research (EURICUR).

Bienaymé, Alain (1978): *Systems of Higher Education: France*. New York: International Council for Educational Development (ICED).

Birnbaum, Robert (1988): *How Colleges Work. The Cybernetics of Academic Organization and Leadership*. San Fransisco: Jossey-Bass.

Blegvad, Mogens & Jeppesen, Steen Leth (1975): 'Danish Universities in Transition'. In Seabury, Paul (ed.) (1975): *Universities in the Western World*. New York: Free Press, 181–194.

Bleiklie, Ivar (2009): 'Norway: From Tortoise to Eager Beaver?' In Paradeise, Catherine & Reale, Emanuela & Bleiklie, Ivar & Ferlie, Ewan (eds.) (2009b): *University Governance. Western European Comparative Perspectives*. [London]: Springer, 127–152.

Bleiklie, Ivar (2014): 'Comparing university organizations across boundaries'. *Higher Education* Volume 67, Number 3/2014, 381–391.

Bogetoft, Peter & Fried, Harold O. & Eeckaut, Philippe Vanden (2007): 'The University Benchmark: an Interactive Computer Approach'. In Bonaccorsi, Andrea & Daraio, Cinzia (eds.) (2007): *Universities and Strategic Knowledge Creation. Specialization and Performance in Europe*. Cheltenham: Edward Elgar Publishing, 443–462.

Bonaccorsi, Andrea & Daraio, Cinzia (eds.) (2007): *Universities and Strategic Knowledge Creation. Specialization and Performance in Europe*. Cheltenham: Edward Elgar Publishing.

Bourricaud, François (1975): 'The French University as a 'Fixed Society' or, the Futility of the 1968 'Reform''. In Seabury, Paul (ed.) (1975): *Universities in the Western World*. New York: Free Press, 232–245.

Brandser, Gry Cathrin (2006): *Humboldt Revisited: The Institutional Drama of Academic Identity. Report No. 95 (2006)*. Bergen: University of Bergen.

Brennan, John & Papatsiba, Vassiliki & Sousa, Sofia Branco & Hoffman, David M. (2016): 'Diversity of Higher Education Institutions in Networked Knowledge Societies: A Comparative Examination'. In Hoffman, David M. & Välimaa, Jussi (eds.) (2016): *Re-becoming Universities? Higher Education Institutions in Networked Knowledge Societies*. Dordrecht: Springer, 115–139.

Brown, William R. (1982): *Academic Politics*. Alabama: University of Alabama Press.

Bryman, Alan & Beardsworth, A. D. & Keil, E.T & Ford, J. (1983): 'Organizational Size and Specialization'. *Organization Studies* Volume 4, Number 3/1983, 271–277.

Bryman, Alan & Pettitt, A. N. (1985): 'Problems of Short Scales: the Case of the Aston Studies.'. *Quality and Quantity* Volume 19, Number 4/1985, 375–382.

Burn, Barbara B. & Altbach, Philip G. & Kerr, Clark & Perkins, James A. (1971): *Higher Education in Nine Countries. A Comparative Study of Colleges and Universities Abroad*. New York: McGraw-Hill Book Company.

Buxton, L. H. Dudley & Gibson, Strickland (1935): *Oxford University Ceremonies*. Oxford: Clarendon (University) Press.

Cameron, Kim S. & Whetten, David A. (1983): 'Models of the Organizational Life Cycle: Applications to Higher Education'. *The Review of Higher Education* Volume 6, Number 4/1983, 269–299.

Carroll, Glenn R. & Hannan, Michael T. (2000): *The Demography of Corporations and Industries*. Princeton, New Jersey: Princeton University Press.

Cerych, Ladislav & Sabatier, Paul (1986): *Great Expectations and Mixed Performance: the Implementation of Higher Education Reforms in Europe*. Chester: Trentham Books.

Cerych, Ladislav & Sabatier, Paul (1992): 'Reforms and Higher Education: Implementation'. In Clark, Burton R. & Neave, Guy R. (eds.) (1992): *The Encyclopedia of Higher Education. Volume 2*. New York: Pergamon Press, 1003–1014.

Charle, Christophe (2004): 'Patterns.' In Rüegg, Walter (ed.) (2004): *A History of the University in Europe. Volume III: Universities in the Nineteenth and Early Twentieth Centuries (1800–1945)*. Cambridge: Cambridge University Press, 33–80.

Child, John (1976): 'Predicting and Understanding Organization Structure'. In Pugh, D. S. & Hinings, C. R. (eds.) (1976): *Organizational Structure: Extensions and Replications. The Aston Programme II*. Hampshire: Saxon House, 45–64.

Clark, Burton R. (1977): *Academic Power in Italy. Bureaucracy and Oligarchy in a National University System*. Chicago: University of Chicago Press.

Clark, Burton R. (1983): *The Higher Education System. Academic Organization in Cross-National Perspective*. Berkeley: University of California Press.

Clark, Burton R. (1993): 'The Problem of Complexity in Modern Higher Education'. In Rothblatt, Sheldon & Wittröck, Bjørn (eds.) (1993): *The European and American University since 1800: Historical and Sociological Essays*. Cambridge: Cambridge University Press, 263–279.

Clark, Burton R. (1996): 'Substantive Growth and Innovative Organization: New Categories for Higher Education Research'. *Higher Education* Volume 32, Number 4/1996, 417–430.

Clark, Burton R. (1998): 'The Entrepreneurial University: Demand and Response'. *Tertiary Education and Management* Volume 4, Number 1/1998, 5–16.

Clark, Burton R. (2004a): 'Delineating the Character of the Entrepreneurial University'. *Higher Education Policy* Volume 17, Number 4/2004, 355–370.

Clark, Burton R. (2004b): *Sustaining Change in Universities. Continuities in Case Studies and Concepts*. Maidenhead & New York: Society for Research into Higher Education & Open University Press.

Clark, Burton R. (2006): *On Higher Education. Selected Writings, 1956–2006*. Baltimore: The Johns Hopkins University Press.

Coate, Kelly & Mac Labhrainn, Iain (2009): 'Irish Higher Education and the Knowledge Economy'. In Huisman, Jeroen (ed.) (2009): *International Perspectives on the Governance of Higher Education. Alternative Frameworks for Coordination*. New York: Routledge, 198–215.

Cobban, Alan B. (1988): *The Medieval English Universities: Oxford and Cambridge to c. 1500*. Aldershot: Scolar Press.

Commission of the European Communities (1991): *A Guide to Higher Education Systems and Qualifications in the European Community*. London: Kogan Page.

Commission of the European Communities (2003): *The Role of the Universities in the Europe of Knowledge. Communication from the Commission*. Brussels: Commission of the European Communities.

Crespi, Gustavo (2007): 'The UK knowledge production function'. In Bonaccorsi, Andrea & Daraio, Cinzia (eds.) (2007): *Universities and Strategic Knowledge Creation. Specialization and Performance in Europe*. Cheltenham: Edward Elgar Publishing, 306–343.

Crossley, Michael & Broadfoot, Patricia (1992): 'Comparative and International Research in Education: Scope, Problems and Potential'. *British Educational Research Journal* Volume 18, Number 2/1992, 99–112.

Daalder, Hans (1975): 'The Dutch Universities between the 'New Democracy' and the 'New Management' in Transition'. In Seabury, Paul (ed.) (1975): *Universities in the Western World*. New York: Free Press, 195–231.

Delin, John (1972): 'Annan on Universities'. *New Scientist* Volume 56, Number 819/1972, 316.

Dhondt, Pieter (2017): 'Jatkuvuusia yliopistomailmassa. Pohdintoja koulutuksen ja tieteen hyödyntämisestä Hollannissa ja Belgiassa historiallisesta näkökulmasta'. In Aalto, Sari & Nyström, Samu & Peake, Rose-Marie (eds.) (2017): *Leivoksia, kaupunkilaisia ja sivistysaatteita. Kävelyretkiä Euroopan historiaan*. Helsinki: Kirjapaja, 108–123.

Diefenbach, Thomas & Sillince, John A. A. (2011): 'Formal and Informal Hierarchy in Different Types of Organization'. *Organization Studies* Volume 32, Number 11/2011, 1515–1537.

DiMaggio, Paul J. & Powell, Walter W. (1983): 'The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields'. *American Sociological Review* Volume 48, Number April 1983, 147–160.

Donaldson, Lex (1996): *For Positivist Organization Theory. Proving the Hard Core*. London: Sage Publications.

Durkheim, Emile (1977): *The Evolution of Educational Thought: Lectures on the Formation and Development of Secondary Education in France*. London: Routledge & Kegan Paul.

Erkkilä, Tero (2013): 'Introduction: University Rankings and European Higher Education'. In Erkkilä, Tero (ed.) (2013): *Global University Rankings. Challenges for European Higher Education*. Hampshire: Palgrave Macmillan, 3–19.

Eräsaari, Leena (1995): *Kohtaamisia byrokraattisilla näyttämöillä*. Helsinki: Gaudeamus.

Eräsaari, Leena (2002): *Julkinen tila ja valtion yhtiöittäminen*. Helsinki: Gaudeamus.

Esko, Timo (1993): *Korkeakoulujen sisäisen hallinnon kehittäminen. Selvitysmiehen raportti 1993. Opetusministeriön koulutus- ja tiedepolitiikan linjan julkaisusarja 8/1993*. Helsinki: Ministry of Education.

Estermann, Thomas & Nokkala, Terhi (2009): *University Autonomy in Europe I. Exploratory Study*. Brussels: European University Association (EUA).

Estermann, Thomas & Nokkala, Terhi & Steinel, Monika (2011): *University Autonomy in Europe II. The Scorecard*. Brussels: European University Association (EUA).

Etzioni, Amitai (1975): *A Comparative Analysis of Complex Organisations. On Power, Involvement, and Their Correlates. Revised and Enlarged Edition*. New York: The Free Press.

Eurich, Nell P. (1981): *Systems of Higher Education in Twelve Countries. A Comparative View*. New York: Praeger.

European University Association (2019): *2018 European University Association Annual Report*. Brussels: European University Association.

Eurydice (2000): *Two Decades of Reform in Higher Education in Europe: 1980 Onwards*. Brussels: Eurydice.

Evans, G. R. (2010a): *The University of Oxford. A New History*. London: I. B. Tauris.

Evans, G. R. (2010b): *The University of Cambridge. A New History*. London: I. B. Tauris.

Ferlie, Ewan & Andresani, Gianluca (2009): 'United Kingdom from Bureau Professionalism to New Public Management?' In Paradeise, Catherine & Reale, Emanuela & Bleiklie, Ivar & Ferlie, Ewan (eds.) (2009b): *University Governance. Western European Comparative Perspectives*. [London]: Springer, 177–195.

Ferruolo, Stephen C. (1988): 'Parisus-Paradisus: The City, Its Schools, and the Origins of the University of Paris'. In Bender, Thomas (ed.) (1988): *The University and the City. From Medieval Origins to the Present*. New York: Oxford University Press, 22–43.

Flynn, James T. (1988): 'Russia's 'University Question': Origins to Great Reforms 1802–1863'. *History of Universities* Volume VII, 1988, 1–35.

Flyvbjerg, Bent (2001): *Making Social Science Matter. Why social inquiry fails and how it can succeed again*. Cambridge: Cambridge University Press.

Frijhoff, Willem (1996): 'Patterns'. In Ridder-Symoens, Hilde de (ed.) (1996): *A History of the University in Europe. Volume II: Universities in Early Modern Europe*. Cambridge: Cambridge University Press, 43–110.

Fuller, Steve (2000): *The Governance of Science: Ideology and the Future of the Open Society*. Buckingham: Open University Press.

García-Aracil, Adela (2007): 'Expansion and Reorganisation in the Spanish Higher Education System'. In Bonaccorsi, Andrea & Daraio, Cinzia (eds.) (2007): *Universities and Strategic Knowledge Creation. Specialization and Performance in Europe*. Cheltenham: Edward Elgar Publishing, 376–401.

Gellert, Claudius (1993a): 'Changing Patterns of European Higher Education'. In Gellert, Claudius (ed.) (1993): *Higher Education in Europe. Higher Education Policy Series 16*. London: Jessica Kingsley Publishers, 9–20.

Gellert, Claudius (1993b): 'Structures and Functional Differentiation. Remarks on Changing Paradigms of Tertiary Education in Europe'. In Gellert, Claudius (ed.) (1993): *Higher Education in Europe. Higher Education Policy Series 16*. London: Jessica Kingsley Publishers, 234–246.

Gerbod, Paul (2004): 'Relations with authority'. In Rüegg, Walter (ed.) (2004): *A History of the University in Europe. Volume III: Universities in the Nineteenth and Early Twentieth Centuries (1800–1945)*. Cambridge: Cambridge University Press, 83–100.

Gevers, Lieve & Vos, Louis (2004): 'Student movements'. In Rüegg, Walter (ed.) (2004): *A History of the University in Europe. Volume III: Universities in the Nineteenth and Early Twentieth Centuries (1800–1945)*. Cambridge: Cambridge University Press, 269–361.

Gieysztor, Aleksander (1992): 'Management and Resources'. In Ridder-Symoens, Hilde de (ed.) (1992): *A History of the University in Europe. Volume I: Universities in the Middle Ages*. Cambridge: Cambridge University Press, 108–143.

Gornitzka, Åse (2007): 'The Lisbon Process: A Supranational Policy Perspective'. In Maassen, Peter & Olsen, Johan P. (eds.) (2007): *University Dynamics and European Integration. Higher Education Dynamics Volume 19*. Dordrecht: Springer, 155–178.

Gornitzka, Åse & Maassen, Peter & Olsen, Johan P. & Stensaker, Bjørn (2007): "Europe of Knowledge": Search for a New Pact'. In Maassen, Peter & Olsen, Johan P. (eds.) (2007): *University Dynamics and European Integration. Higher Education Dynamics Volume 19*. Dordrecht: Springer, 181–214.

Green, V. H. H. (1974): *A History of Oxford University*. London: B. T. Batsford.

Grendler, Paul F. (2002): *The Universities of the Italian Renaissance*. Baltimore: Johns Hopkins University Press.

Grinberg Rabinowicz, Sarit & Chinapah, Vinayagum (2015): 'Challenges and trends in shaping European higher education'. In Jokila, Suvi & Kallo, Johanna & Rinne, Risto (eds.) (2015): *Comparing Times And Spaces. Historical, Theoretical and Methodological Approaches to Comparative Education. Finnish Educational Research Association Research in Educational Sciences 69*. Jyväskylä: University of Jyväskylä, 193–207.

Guédon, Jean-Claude (2009): 'Between Excellence and Quality. The European Research Area in Search of Itself'. In Barnett, Ronals & Guédon, Jean-Claude & Masschelein, Jan & Simons, Maarten & Robertson, Susan & Standaert, Nicolas (2009): *Rethinking the University after Bologna. New Concepts and Practices beyond Tradition and the Market*. Antwerpen: Universitair Centrum Sint-Ignatius Antwerpen, 55–79.

Guri-Rosenblit, Sarah (2012): 'Opening up Access to Higher Education: Implications and Challenges'. In Koscielnak, Cezary & Makowski, Jaroslaw (eds.) (2012): *Freedom, Equality, University*. Warsaw: Civic Insitute, 57–70.

Haavisto, Tarmo & Hagelund, Bente (2003): *Universitetsreformer og deres betydning for administrationen*. A paper presented in the NUAS jubilee seminar in Vaasa, Finland 13.–16.8.2003.

Hakala, Johanna & Kaukonen, Erkki & Nieminen, Mika & Ylijoki, Oili-Helena (2003): *Yliopisto – tieteen kehdestä projektimyllyksi?* Helsinki: Gaudeamus.

Halász, Gábor (2010): 'Organisational Change and Development in Higher Education'. In Huisman, Jeroen & Pausits, Attila (eds.) (2010): *Higher Education Management and Development. Compendium for Mangers*. Münster: Waxmann, 51–63.

Halonen, Matti & Kuoppala, Kari & Lindqvist, Ossi V. & Virtanen, Turo (2004): *Neljän monialaisen yliopiston hallinnon arviointi. Ulkoisen arviointiryhmän raportti. Tampereen yliopisto tänään ja huomenna – Yliopiston sisäisiä kehittämishdotuksia, muistioita ja raportteja 66*. Tampere: The University of Tampere.

Hammerstein, Notker (1996): 'Relations with authority'. In Ridder-Symoens, Hilde de (ed.) (1996): *A History of the University in Europe. Volume II: Universities in Early Modern Europe*. Cambridge: Cambridge University Press, 113–153.

Hannan, Michael T. (2005): 'Ecologies of Organizations: Diversity and Identity'. *Journal of Economic Perspectives* Volume 19, Number 1/2005, 51–70.

Hannan, Michael T. & Freeman, John (1977): 'The Population Ecology of Organizations'. *American Journal of Sociology* Volume 82, Number 5/1977, 929–964.

Hannan, Michael T. & Freeman, John (1989): *Organizational Ecology*. Cambridge, Massachusetts: Harvard University Press.

Hansen, Hanne Foss & Geschwind, Lars & Kivistö, Jussi & Pekkola, Elias & Pinheiro, Rómulo & Pulkkinen, Kirsi (2019): 'et al., "Balancing accountability and trust: university reforms in the Nordic countries'. *Higher Education* Volume 78, Issue 3/2019, 557–573.

Harman, Grant & Harman, Kay (2003): 'Institutional Mergers in Higher Education: Lessons from International Experience'. *Tertiary Education and Management* Volume 9, Number 1/2003, 29–44.

Harrinvirta, Markku (2000): *Strategies of Public Sector Reform in the OECD Countries. A Comparison. Commentationes Scientiarum Socialium 57 2000*. Helsinki: Suomen tiedeseura.

Haskins, Charles Homer (1957): *The Rise of Universities*. London: Cornell University Press.

Helenius, Börje & Hämäläinen, Esa & Tuunainen, Juha (eds.) (1996): *Kohti McDonald's -yliopistoa? Näkökulmia suomalaiseen korkeakoulu- ja tiedepolitiikkaan*. Helsinki: Tammi.

Hermans, Jos M. M. & Nelissen, Marc (1994): *Charters of Foundation and Early Documents of the Universities of the Coimbra Group*. Groningen: University of Groningen.

Hinings, C. R. & Greenwood, Royston (2002): 'Disconnects and Consequences in Organization Theory?' *Administrative Science Quarterly* Volume 47, Number 3/2002, 411–421.

Hinings, C. R. & Lee, Gloria L. (1976): 'Dimensions of Organization Structure and their Context: A Replication'. In Pugh, D. S. & Hinings, C. R. (eds.) (1976): *Organizational Structure : Extensions and Replications. The Aston Programme II*. Hampshire: Saxon House, 3–11.

Hirsjärvi, Sirkka & Remes, Pirkko & Sajavaara, Paula (2010): *Tutki ja kirjoita. (15.–16. uudistettu painos.)* Helsinki: Tammi.

Hogan, John (2005): 'Should Form Follow Function? Changing Academic Structures in UK Universities'. *Perspectives* Volume 9, Number 2/2005, 49–56.

Hogan, John (2012): 'Restructuring Revisited. Changing Academic Structures in UK Universities'. *Perspectives* Volume 16, Number 4/2012, 129–135.

Holdaway, E. A. & Newberry, J. F. & Hickson, D. J. & Heron, R. P. (1976): 'Dimensions of Organizations in Complex Societies: The Educational Sector'. In Pugh, D. S. & Hinings, C. R. (eds.) (1976): *Organizational Structure: Extensions and Replications. The Aston Programme II*. Hampshire: Saxon House, 115–135.

Hood, Christopher (1998): *The Art of The State. Culture, Rhetoric, and Public Management*. Oxford: Clarendon Press.

Houtsonen, Jarmo (2002): 'Institutionaalisen organisaatioteorian jännitteet ja horjuvuudet: käsitteellisten vastakohtien bourdieulainen analyysi'. *Hallinnon tutkimus* Volume 21, Number 1/2002, 40–66.

Huisman, Jeroen (2009): 'Coming to Terms with Governance in Higher Education'. In Huisman, Jeroen (ed.) (2009): *International Perspectives on the Governance of Higher Education. Alternative Frameworks for Coordination*. New York: Routledge, 1–9.

Huisman, Jeroen & Pausits, Attila (2010): 'Introduction'. In Huisman, Jeroen & Pausits, Attila (eds.) (2010): *Higher Education Management and Development. Compendium for Managers*. Münster: Waxmann, 9–12.

Huotari, Vesa (2003): 'Yliopisto metodologisena dilemmana'. *Tiedepolitiikka* Volume 28, Number 2/2003, 33–44.

Huotari, Vesa & Kalalahti, Joanna (2017): 'Organisaatioiden yhdistettävyyden arviointi'. *Hallinnon tutkimus* Volume 36, Number 1/2017, 21–35.

Hyde, J. Kenneth (1988): 'Universities and Cities in Medieval Italy'. In Bender, Thomas (ed.) (1988): *The University and the City. From Medieval Origins to the Present*. New York: Oxford University Press, 13–21.

Hyryläinen, Esa (1999): *Reformit, hallintopolitiikka ja yhdenmukaistuminen: Vertaileva tutkimus neljän Euroopan valtion 1980- ja 1990-lukujen hallintopoliittisen päätöksenteon yhdenmukaistumisen edellytyksistä. Acta Wasaensia 73, hallintotiede 5*. Vaasa: The University of Vaasa.

Hyryläinen, Esa (2000): 'Vertailtavuuden ongelmia hallintopolitiikan ja -reformien tutkimuksessa'. In

Salminen, Ari (ed.) (2000): *Hallintovertailun metodologia. Vaasan yliopiston julkaisuja: tutkimuksia* 234, *hallintotiede* 26. Vaasa: The University of Vaasa, 130–146.

Hyryläinen, Esa, & Viinamäki, Olli-Pekka (eds.) (2011): *Julkinen hallinto ja julkinen johtaminen. Juhlakirja professori Ari Salmisen 60-vuotispäivän kunniaksi. Acta Wasaensia* 238, *julkisjohtaminen* 16. Vaasa: The University of Vaasa.

Hyryläinen, Esa, & Viinamäki, Olli-Pekka (2011): 'Vertailu hallinnon teorianmuodostuksessa'. In Virtanen, Turo & Ahonen, Pertti & Syväjärvi, Antti & Vartiainen, Pirkko & Vartola, Juha & Vuori, Jari (eds.) (2011): *Suomalainen hallinnon tutkimus – mistä, mitä, minne?* Tampere: Tampere University Press, 218–243.

Häyrynen-Alestalo, Marja & Snell, Karoliina & Peltola, Ulla (2000): 'Pushing Universities to Market Their Products: Redefinitions of Academic Activities in Finland'. *Comparative Social Research* Volume 19, 165–212.

Hölttä, Seppo (1995): *Towards the Self-Regulative University. University of Joensuu Publications in Social Sciences n:o* 23. Joensuu: University of Joensuu.

Ikola-Norrbacka, Rinna, & Lähdesmäki, Kirsi (2011): 'New Public Management – Näkökulmia julkisjohtamiseen ja hyvään hallintoon'. In Virtanen, Turo & Ahonen, Pertti & Syväjärvi, Antti & Vartiainen, Pirkko & Vartola, Juha & Vuori, Jari (eds.) (2011): *Suomalainen hallinnon tutkimus – mistä, mitä, minne?* Tampere: Tampere University Press, 244–272.

Jakonen, Mikko & Tilli, Jouni (eds.) (2011): *Yhteinen yliopisto*. Helsinki: Tutkijaliitto.

Jensen, Henrik (2012): *Weber and Durkheim: a methodological comparison*. London & New York: Routledge.

Jeroszenko, Lubow (2012): 'Higher Education as a Driving Force for Modernization and Innovative Economy: Russian Case'. In Koscielnak, Cezary & Makowski, Jaroslaw (eds.) (2012): *Freedom, Equality, University*. Warsaw: Civic Insitute, 201–220.

Jirásek, Michal & Bílek, Jan (2018): 'The Organizational Life Cycle: Review and Future Agenda'. *Quality Innovation Prosperity / Kvalita Inovácia Prosperita* Volume 22, Number 3/2018, 1–18.

Johanson, Jan-Erik (2002): 'Strategiaa etsimässä. Kuntien tytäryhteisöjen omistaja-ohjaus -tapaus Helsinki' *Hallinnon tutkimus* Volume 21, Number 3/2002, 257–276.

Jones, Martin & Jones, Rhys & Woods, Michael (2004): *An Introduction to Political Geography. Space, Place and Politics*. London: Routledge.

Juva, Mikko (1970): 'Yliopiston asema korkeakoululaitoksessamme'. In Luukanen, Niilo (ed.) (1970): *Helsingin yliopisto. Historiaa ja nykypäivää*. (Helsingin yliopiston erikoispainos.) Porvoo: WSOY, 34–56.

Kallo, Johanna & Jokila, Suvi & Rinne, Risto (2015): 'Time and space as internalised themes in comparative education research'. In Jokila, Suvi & Kallo, Johanna & Rinne, Risto (eds.) (2015): *Comparing Times And Spaces. Historical, Theoretical and Methodological Approaches to Comparative Education. Finnish Educational Research Association Research in Educational Sciences* 69. Jyväskylä: University of Jyväskylä, 17–27.

Kankaala, Kari & Kaukonen, Erkki & Kutinlahti, Pirjo & Lemola, Tarmo & Nieminen, Mika & Välimaa,

Jussi (2004): *Yliopistojen kolmas Tehtävä? Suomen itsenäisyyden juhlarahaston julkaisusarja 264*. Helsinki, Edita.

Kanniainen, Vesa (1995): 'Onko valtiovallan ja yliopistolaitoksen romanssi ohi?' In Wiberg, Matti (ed.) (1995): *Yliopisto uusiksi!* Helsinki: Gaudeamus, 69–85.

Karvinen, Marko (2002): *Co-operation and Local Partnership Between Cities and Universities. Experiences of European Union Capital Cities*. Helsinki: City of Helsinki Urban Facts.

Kasanen, Eero & Sotamaa, Yrjö & Pursula, Matti (2013): 'Aallon harjalla – Yliopistofuusion hyödyt ja haasteet'. In Raivio, Kari (ed.) (2013): *Laatu, laatu, laatu. Yliopistojen elinehto*. Helsinki: Suomen Toivo -ajatuspaja, 25–45.

Kerr, Clark (1995): 'The Idea of a Multiversity'. In Kerr, Clark (1995): *The Uses of the University*. Cambridge: Harvard University Press, 1–34.

Kinnunen, Merja (2005): 'Opettaminen uuden kapitalismin ajan yliopistossa'. *Tiede & edistys* Volume 30, Number 1/2005, 38–45.

Kivinen, Osmo & Rinne, Risto & Ketonen, Kimmo (1993): *Yliopiston huomen. Korkeakoulupolitiikan historiallinen suunta Suomessa*. Helsinki: Hanki ja jää.

Kivistö, Jussi (2019): 'Unohdettu organisaatiosuunnittelu?' *Hallinnon tutkimus* Volume 38, Number 3/2019, 153–154.

Klinge, Matti (1996): 'Université et Nation – University and Nation'. In Norrback, Märtha & Ranki, Kristiina (1996): *University and Nation. The University and the Making of the Nation in Northern Europe in the 19th and 20th Centuries*. *Studia Historica* 53. Helsinki: Finnish Historical Society, 13–19.

Klinge, Matti (2004): 'Teachers'. In Rüegg, Walter (ed.) (2004): *A History of the University in Europe. Volume III: Universities in the Nineteenth and Early Twentieth Centuries (1800–1945)*. Cambridge: Cambridge University Press, 123–161.

Klinge, Matti (2011): *A European University. The University of Helsinki 1640–2010*. Helsinki: Otava.

Klinge, Matti & Knapas, Rainer & Leikola, Anto & Strömberg, John (1987): *Helsingin yliopisto 1640–1990. Ensimmäinen osa: Kuninkaallinen Turun Akatemia 1640–1808*. Helsinki, Otava.

Klinge, Matti & Knapas, Rainer & Leikola, Anto & Strömberg, John (1989): *Helsingin yliopisto 1640–1990. Toinen osa: Keisarillinen Aleksanterin Yliopisto 1808–1917*. Helsinki, Otava.

Klinge, Matti & Knapas, Rainer & Leikola, Anto & Strömberg, John (1990): *Helsingin yliopisto 1640–1990. Kolmas osa: Helsingin Yliopisto 1917–1990*. Helsinki: Otava.

Knapas, Rainer (1996): 'An Intellectual Space: Codes of Early 19th Century University Architecture in Northern Europe'. In Norrback, Märtha & Ranki, Kristiina (1996): *University and Nation. The University and the Making of the Nation in Northern Europe in the 19th and 20th Centuries*. *Studia Historica* 53. Helsinki: Finnish Historical Society, 45–50.

Knapas, Rainer (1999): 'Mikä kampus?' In Vuori, Eija (ed.) (1999): *Helsingin yliopisto – kampusten yliopisto. University of Helsinki – University of Campuses*. Helsinki: Edita, 12–15.

Kohvakka, Mikko & Nevala, Arto (2020): *Itä-Suomen yliopisto. Reformi ja sen tekijät*. Joensuu &

Kuopio: University of Eastern Finland.

Kolbe, Laura (1993): *Helsingin Yliopiston Ylioppilaskunnan historia 5: Sivistyneistön rooli. Helsingin Yliopiston Ylioppilaskunta 1944–1959*. Helsinki: Otava.

Kuoppala, Kari (2004): *Neljän suomalaisen monialaisen yliopiston hallinnon itsearvioinnin yhteenvetoraportti. Tampereen yliopisto tänään ja huomenna – Yliopiston sisäisiä kehittämisehdotuksia, muistioita ja raportteja 65*. Tampere: Tampereen yliopiston hallintotieteen laitos.

Kuoppala, Kari (2014): 'Korkeakoulut organisaatioina'. In Pekkola, Elias & Kivistö, Jussi & Kohtamäki, Vuokko (eds.) (2014): *Korkeakouluhallinto. Johtaminen, talous ja politiikka*. Helsinki: Helsinki University Press, 245–290.

Kuoppala, Kari & Kohtamäki, Vuokko & Nokkala, Terhi & Kivistö, Jussi & Lyytinen, Anu (2003): 'Korkeakoulututkimus esittelyssä'. *Administrative Studies* Volume 22, Number 1/2003, 34–45.

Kuoppala, Kari & Marttinen, Kimmo (1995): *Suomen tiedehallinnon määräytymisestä osana eurooppalaista korkeakoulujärjestelmää. Länsi-Suomen taloudellinen tutkimuslaitos, julkaisuja No 60*. Vaasa: The University of Vaasa.

Kyvik, Svein & Ødegård, Einar (1990): *Universitetene foran 90-tallet. Endringer i styring og finansiering av forskning. FPR-publikation nr. 13*. Copenhagen: Nordic Council of Ministers.

Kyvik, Svein & Stensaker, Bjørn (2013): 'Factors Affecting the Decision to Merge: The case of strategic mergers in Norwegian higher education'. *Tertiary Education and Management* Volume 19, Number 4/2013, 323–337.

Kähkönen, Antti (2016): 'Ylioppilaskuntien nousu ja tuho'. In Eerola, Ville (ed.) (2016): *Lyyra 2016. Helsingin yliopiston ylioppilaskunnan historian ystävien vuosikirja nro 2*. Helsinki: Helsingin yliopiston ylioppilaskunnan historian ystävät, 33–54.

Lampinen, Osmo (2003): *Suomalaisen korkeakoulutuksen uudistaminen: reformeja ja innovaatioita. Opetusministeriön julkaisuja 2003:25*. Helsinki: Ministry of Education.

Lawrence, Paul R. & Lorsch, Jay W. (1967): *Organization and Environment: Managing Differentiation and Integration*. Boston: Harvard University.

Le Galès, Patrick (2002): *European Cities. Social Conflicts and Governance*. Oxford: Oxford University Press.

Leff, Gordon (1992): 'The *trivium* and the three philosophies'. In Ridder-Symoens, Hilde de (ed.) (1992): *A History of the University in Europe. Volume I: Universities in the Middle Ages*. Cambridge: Cambridge University Press, 307–336.

Lehikoinen, Anita (2002): 'Tutkintojärjestelmien ja korkeakoulumallien kehitys Euroopassa'. In Liljander, Juha-Pekka (ed.) (2002): *Omalla tiellä. Ammattikorkeakoulut kymmenen vuotta*. Helsinki: Arene ry. & Edita Publishing, 340–349.

Lehtisalo, Liekki & Raivola, Reijo (1992): *Koulutuspolitiikka*. Helsinki: WSOY.

Lehto, Olli (1999): *Ei Yliopiston voittanutta*. Helsinki: Otava.

Levy, Daniel C. (2006): 'How Private Higher Education's Growth Challenges the New Institutionalism'.

In Meyer, Heinz-Dieter & Rowan, Brian (eds.) (2006): *New Institutionalism in Education*. New York: State University of New York Press, 143–161.

Li, Dong (2011): ‘Mergers of Higher Education Institutions in China and Finland’. In Cai, Yuzhuo & Kivistö, Jussi (eds.) (2011): *Higher Education Reforms in Finland and China. Experiences and Challenges in Post-Massification Era*. Tampere: Tampere University Press, 225–243.

Lockwood, Geoffrey (2011): ‘Management and Resources’. In Rüegg, Walter (ed.) (2011): *A History of the University in Europe. Volume IV: Universities since 1945*. Cambridge: Cambridge University Press, 124–161.

Lucas, Christopher J. (1994): *American Higher Education. A History*. New York: St. Martin’s Press.

Luce, John Victor (1992): *Trinity College Dublin. The First 400 Years*. Dublin: Trinity College Dublin Press.

Lötjönen, Salla (ed.) (1999): *Tutkijan ammattietiikka*. Helsinki: Ministry of Education.

Maassen, Peter A. M. & Goedegebuure, Leo C. J. & Westerheijden Don F. (1993): ‘Social and Political Conditions for the Changing Higher Education Structures in the Netherlands’. In Gellert, Claudius (ed.) (1993): *Higher Education in Europe. Higher Education Policy Series 16*. London: Jessica Kingsley Publishers, 135–151.

Maassen, Peter & Olsen, Johan P. (2007): ‘European Debates on the Knowledge Institution: the Modernization of the University at the European Level’. In Maassen, Peter & Olsen, Johan P. (eds.) (2007): *University Dynamics and European Integration. Higher Education Dynamics Volume 19*. Dordrecht: Springer, 3–22.

Magna Charta Universitatum. A Joint Declaration of European Universities. Declared at Bologna on September 18th 1988 on the occasion of the 900th anniversary of the University of Bologna. Wording of the declaration can be found for example in Uusitalo, Paavo & Lipponen, Jukka (eds.) (1995): *Yliopisto ja valtiovalta. Yliopistolaki ja sen perustelut*. Helsinki: Gaudeamus.

Malkki, Pertti & Hölttä, Seppo (2000): ‘Korkeakoulu- ja tiedepolitiikan muutokset 1960-luvulta 1990-luvulle’. In Honkimäki, Sanna & Jalkanen, Hannu (eds.) (2000): *Innovatiivinen yliopisto?* Jyväskylä: Jyväskylä University Press, 43–57.

Mansikkamäki, Ulla (2010): *Yliopistouudistus Helsingin yliopistossa. Taustat, tavoitteet ja toteutus. Helsingin yliopiston hallinnon julkaisuja 70*. Helsinki: The University of Helsinki.

Marton, Susan Gerard (2000): *The Mind of the State: The Politics of University Autonomy in Sweden, 1968–1998*. Göteborg: BAS Publisher.

Mattila, Mikko & Uusikylä, Petri (eds.) (1999): *Verkosto-yhteiskunta. Käytännön johdatus verkostotutkimukseen*. Helsinki: Gaudeamus.

Mattila, Pekka (2006): *Toiminta, valta ja kokemus organisaation muutoksessa – Tutkimus kolmesta suuryrityksestä. Helsingin yliopiston sosiologian laitoksen tutkimuksia nro 248, 2006*. Helsinki: Helsinki University Press.

McClelland, Charles E. (1988): ‘To Live for Science: Ideals and Realities at the University of Berlin’. In Bender, Thomas (ed.) (1988): *The University and the City. From Medieval Origins to the Present*. New York: Oxford University Press, 181–197.

McHenry, Dean E. (ed.) (1977): *Academic Departments. Problems, Variations and Alternatives*. San Francisco: Jossey-Bass Publishers.

Meek, V. Lynn (2003): 'Introduction'. In Amaral, Alberto & Meek, V. Lynn & Larsen, Ingvild M. (eds.) (2003): *The Higher Education Managerial Revolution?* Dordrecht & Boston & London: Kluwer Academic Publishers, 1–29.

Merikoski, Veli (1966): *Yliopistohallinnon ydinkysymyksiä*. Helsinki: WSOY.

Miller, Danny & Friesen, Peter H. (1984): *Organizations. A Quantum View*. Englewood Cliffs, New Jersey: Prentice-Hall.

Mills, C. Wright (2015): *Sosiologinen mielikuvitus*. Helsinki: Gaudeamus Helsinki University Press.

Ministry of Education (1998): *Management by Results in Higher Education. Koulutus- ja tiedepolitiikan osaston julkaisusarja 55*. Helsinki: Ministry of Education.

Mintzberg, Henry (1979): *The Structuring of Organizations. A Synthesis of the Research*. London: Prentice Hall.

Mintzberg, Henry (1983): *Structure in Fives: Designing Effective Organizations*. London: Prentice Hall.

Mintzberg, Henry (2002): 'The Professional Bureaucracy'. In Jenniskens, Ineke (ed.) (2000): *Management and Decision-Making in Higher Education Institutions*. The Hague: Lemma Publishers, 171–194.

Mintzberg, Henry & Ahlstand, Bruce & Lampel, Joseph (1998): *Strategy Safari. The Complete Guide Through The Wilds of Strategic Management*. London: Prentice Hall.

Morphew, Christopher & Huisman, Jeroen (2002): 'Using Institutional Theory to Reframe Research on Academic Drift' *Higher Education in Europe* Volume XXVII, Number 4/2002, 492–506.

Moscatti, Roberto (1993): 'Moving Towards Institutional Differentiation. The Italian Case'. In Gellert, Claudius (ed.) (1993): *Higher Education in Europe. Higher Education Policy Series 16*. London: Jessica Kingsley Publishers, 72–83.

Mustajoki, Arto (2002): *Tuloksena yliopisto. Kokemuksia ja näkemyksiä yliopiston hallinnosta*. Helsinki: Helsinki University Press.

Mälkiä, Matti & Vakkuri, Jarmo (eds.) (1998): *Strateginen johtaminen yliopistoissa*. Tampere: Tampere University Press.

Möller, Horst (1986): 'Nationalsozialistische Wissenschaftsideologie'. In Tröger, Jörg (ed.) (1986): *Hochschule und Wissenschaft im Dritten Reich*. Frankfurt: Campus Verlag, 65–76.

National Advisory Board on Research Ethics (2002): *Hyvä tieteellinen käytäntö ja sen loukkausten käsitteleminen*. Helsinki: Ministry of Education.

Neave, Guy (2011): 'Patterns'. In Rüegg, Walter (ed.) (2011): *A History of the University in Europe. Volume IV: Universities since 1945*. Cambridge: Cambridge University Press, 31–69.

Neave, Guy & Blücker, Kjell & Nybom, Thorsten (eds.) (2006): *The European Research University. An Historical Parenthesis*. New York: Palgrave MacMillan & International Association of Universities.

Newman, John Henry (1907): *The Idea of A University Defined and Illustrated. I. in Nine Discourses Delivered to the Catholics of Dublin. II. In Occasional Lectures and Essays Addressed to the Members of the Catholic University*. London: Longmans, Green & Co.

Niiniluoto, Ilkka (2011): *Dynaaminen sivistysyliopisto. Sata puhetta ja kirjoitusta vuosilta 1987–2010*. Helsinki: Gaudeamus Helsinki University Press.

Nipperdey, Thomas (1975): 'The German University in Crisis'. In Seabury, Paul (ed.) (1975): *Universities in the Western World*. New York: Free Press, 119–142.

Niskanen, Jouni (2000): 'Tilastollinen vertailututkimus'. In Salminen, Ari (ed.) (2000): *Hallintovertailun metodologia. Vaasan yliopiston julkaisuja: tutkimuksia 234, hallintotiede 26*. Vaasa: The University of Vaasa, 147–165.

Noah, Harold (1984): 'The use and abuse of comparative education'. *Comparative Education Review* Volume 28, Number 4/1984, 550–562.

Nokkala, Terhi (2014): 'Korkeakoulutuksen kansainvälinen ja eurooppalainen ulottuvuus'. In Pekkola, Elias & Kivistö, Jussi & Kohtamäki, Vuokko (eds.) (2014): *Korkeakouluhallinto. Johtaminen, talous ja politiikka*. Helsinki: Helsinki University Press, 126–155.

Nuorteva, Jussi (1997): *Suomalaisten ulkomainen opinkäynti ennen Turun akatemian perustamista 1640*. Helsinki: The Finnish Historical Society & The Finnish Society of Church History.

Olsen, Johan P. (2007): 'The Institutional Dynamics of the European University'. In Maassen, Peter & Olsen, Johan P. (eds.) (2007): *University Dynamics and European Integration. Higher Education Dynamics Volume 19*. Dordrecht: Springer, 25–53.

Pakkasvirta, Jussi (2009): 'Kun Universitatis muuttui projektiksi'. In Tomperi, Tuukka (ed.) (2009): *Akateeminen kysymys? Yliopistolain kritiikki ja kiista uudesta yliopistosta*. Tampere: Vastapaino, 57–66.

Palonen, Tuire & Rinne, Risto & Kivinen, Osmo (1992): *Korkeakoulujärjestelmä ja reformipolitiikka. Seitsemän maan vertailu*. Turku: The University of Turku.

Paradeise, Catherine & Bleiklie, Ivar & Enders, Jürgen & Goastellec, Gaële & Michelsen, Svein & Reale, Emanuela & Westerheijden, Don F. (2009a): 'Reform Policies and Change Processes in Europe'. In Huisman, Jeroen (ed.) (2009): *International Perspectives on the Governance of Higher Education. Alternative Frameworks for Coordination*. New York: Routledge, 88–106.

Paradeise, Catherine & Reale, Emanuela & Bleiklie, Ivar & Ferlie, Ewan (eds.) (2009b): *University Governance. Western European Comparative Perspectives*. [London]: Springer.

Patomäki, Heikki (2009): 'Yliopisto konkreettisena utopiana: kokemuksia Turusta Nottinghamiin ja Helsingistä Melbourneen'. In Tomperi, Tuukka (ed.) (2009): *Akateeminen kysymys? Yliopistolain kritiikki ja kiista uudesta yliopistosta*. Tampere: Vastapaino, 25–43.

Pedersen, Olaf (1997): *The First Universities. Studium generale and the origins of university education in Europe*. Cambridge: Cambridge University Press.

Peisert, Hansgert & Framhein, Gerhild (1978): *Systems of Higher Education: Federal Republic of Germany*. New York: International Council for Educational Development (ICED).

Pekkola, Elias & Kivistö, Jussi & Hölttä, Seppo (2014): 'Korkeakoulututkimus'. In Pekkola, Elias &

Kivistö, Jussi & Kohtamäki, Vuokko (eds.) (2014): *Korkeakouluhallinto. Johtaminen, talous ja politiikka*. Helsinki: Helsinki University Press, 19–38.

Pelkonen, Antti & Teräväinen, Tuula & Häyrynen-Alesto, Marja & Waltari, Suvi-Tuuli & Tuominen, Terhi (2010): *Tiedepolitiikan kansainvälisiä kehitystrendejä 2000-luvulla. Finnish Science Policy in International Comparison-hanke. Opetus- ja kulttuuriministeriön julkaisuja 2010:14*. Helsinki: Ministry of Education and Culture.

Peters, B. Guy (2000): 'Julkisen hallinnon vertailun välttämättömyys ja vaikeus'. In Salminen, Ari (ed.) (2000): *Hallintovertailun metodologia. Vaasan yliopiston julkaisuja: tutkimuksia 234, hallintotiede 26*. Vaasa: The University of Vaasa, 185–208.

Peters, B. Guy (2011): 'Comparative Public Administration: After New management, What?' In Hyyryläinen, Esa, & Viinamäki, Olli-Pekka (eds.) (2011): *Julkinen hallinto ja julkinen johtaminen. Juhlakirja professori Ari Salmisen 60-vuotispäivän kunniaksi. Acta Wasaensia 238, julkisjohtaminen 16*. Vaasa: The University of Vaasa, 20–32.

Pietilä, Maria (2014): 'The Many Faces of Research Profiling: Academic Leaders' Conceptions of Research Steering'. *Higher Education* Volume 67, Number 3/2014, 303–316.

Piilonen, Anna-Riitta (1999): *Ammattikorkeakouluyhteistyön periaatteet ja toimintamuodot. Helsingin yliopiston ja Amsterdamin yliopiston benchmarkingprojekti*. Helsinki: The University of Helsinki.

Piironen, Ossi (2016): *Transnational Governance by Numbers: Ranking as Mechanisms of Governing*. Helsinki: University of Helsinki.

Pilbeam, Colin (2009): 'Institutional Structures. Where Legitimacy and Efficiency Meet'. In Tight, Malcolm & Mok, Ka Ho & Huisman, Jeroen & Morphew, Christopher C. (eds.) (2009): *The Routledge International Handbook of Higher Education*. New York & London: Routledge, 343–356.

Pinheiro, Rómulo & Geschwind, Lars & Aarrevaara, Timo (2016): 'Mergers in higher education'. *European Journal of Higher Education* Volume 6, Number 1/2016, 2–6.

Premfors, Rune & Östergren, Bertil (1978): *Systems of Higher Education: Sweden*. New York: International Council for Educational Development (ICED).

Pugh, Derek S. (ed.) (1998): *The Aston Programme, Vols. I–III. The Aston Study and Its Developments*. Singapore: Ashgate/Dartmouth.

Puusa, Anu & Juuti, Pauli (2014): 'Voimmeko rakentaa siltoja organisaatiotutkimuksen paradigmojen ylitse?'. *Hallinnon tutkimus* Volume 33, Number 4/2014, 366–374.

Pystynen, Riitta (1995): *Euroopan unionin koulutuspoliittinen toimintaympäristö. Opetusministeriön koulutus- ja tiedepolitiikan linjan julkaisusarja 26*. Helsinki: Ministry of Education.

Ragin, Charles C. (1989): *The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies*. Berkeley: University of California Press.

Ragin, Charles C. (1994): *Constructing Social Research: the Unity and Diversity of Method*. Thousand Oaks: Pine Forge Press.

Raivio, Kari (2008): 'University Reform: a New Pandemic'. *Helsinki University Bulletin HUB* Volume 27, Number 1/2008, 4.

Raivio, Kari (2013): 'Maaillman yliopistot mullistuksessa'. In Raivio, Kari (ed.) (2013): *Laatu, laatu, laatu. Yliopistojen elinehto*. Helsinki: Suomen Toivo -ajatuspaja, 123–137.

Raivola, Reijo (1994): *Euroopan unionin korkeakoulupolitiikka. Opetusministeriön koulutus- ja tiedepolitiikan linjan julkaisusarja 21*. Helsinki: Ministry of Education.

Reichert, Sybille (2009): *Institutional Diversity in European Higher Education. Tensions and Challenges for Policy Makers and Institutional Leaders*. Brussels: European University Association (EUA).

Rekilä, Eila (2006): *Kenen yliopisto? Tutkimus yliopistojen valtionohjauksesta, markkinaohjautuvuudesta ja itseohjautuvuudesta suomalaisessa yliopistojärjestelmässä*. *Acta Wasaensia 159, hallintotiede 11*. Vaasa: The University of Vaasa.

Remy, Steven P. (2002): *The Heidelberg Myth. The Nazification and Denazification of a German University*. Cambridge: Harvard University Press.

Rhoades, Gary (2003): 'From US to EU, and Back Again: A Glonacal Agency Approach to Globalization'. In Aittola, Helena (ed.) (2003): *€KG? Eurooppa, korkeakoulutus, globalisaatio?* Jyväskylä: Jyväskylä University Press, 23–35.

Rider, Sharon (2009): 'The Future of the European University: Liberal Democracy or Authoritarian Capitalism?' *Culture Unbound* Volume 1, Number 1/2009, 83–104.

Ridder-Symoens, Hilde de (ed.) (1992): *A History of the University in Europe. Volume I: Universities in the Middle Ages*. Cambridge: Cambridge University Press.

Ridder-Symoens, Hilde de (ed.) (1996): *A History of the University in Europe. Volume II: Universities in Early Modern Europe*. Cambridge: Cambridge University Press.

Rinne, Risto (2002): 'Binaarimallista Bolognan tielle: erilliset ammattikorkeakoulut tulevat ja menevät'. In Liljander, Juha-Pekka (ed.) (2002): *Omalla tiellä. Ammattikorkeakoulut kymmenen vuotta*. Helsinki: Arene ry. & Edita Publishing, 80–106.

Roberts, John & Rodríguez Cruz, Águeda M. & Herbst, Jürgen (1996): 'Exporting Models'. In Ridder-Symoens, Hilde de (ed.) (1996): *A History of the University in Europe. Volume II: Universities in Early Modern Europe*. Cambridge: Cambridge University Press, 256–282.

Robinson-Hammerstein, Helga. (1996): 'The Irish Nation and University Education in the Nineteenth Century'. In Norrback, Märtha & Ranki, Kristiina (1996): *University and Nation. The University and the Making of the Nation in Northern Europe in the 19th and 20th Centuries*. *Studia Historica 53*. Helsinki: Finnish Historical Society, 153–163.

Ross, Murray G. (1976): *The University. The Anatomy of Academe*. New York: McGraw-Hill Book Company.

Rothblatt, Sheldon (1988): 'London: A Metropolitan University?'. In Bender, Thomas (ed.) (1988): *The University and the City. From Medieval Origins to the Present*. New York: Oxford University Press, 119–149.

Rüegg, Walter (1992): 'Themes'. In Ridder-Symoens, Hilde de (ed.) (1992): *A History of the University in Europe. Volume I: Universities in the Middle Ages*. Cambridge: Cambridge University Press, 3–34.

Rüegg, Walter (ed.) (2004): *A History of the University in Europe. Volume III: Universities in the*

Nineteenth and Early Twentieth Centuries (1800–1945). Cambridge: Cambridge University Press.

Rüegg, Walter (ed.) (2011): *A History of the University in Europe. Volume IV: Universities since 1945*. Cambridge: Cambridge University Press.

Ryttberg, Malin & Geschwind, Lars (2017): 'Professional support staff at higher education institutions in Sweden: roles and success factors for the job'. *Tertiary Education and Management* Volume 23, Number 4/2017, 334–346.

Saarienen, Taina & Välimaa, Jussi (2006): 'Muutos korkeakoulupolitiikan tutkimuksessa'. In Ursin, Jani & Välimaa, Jussi (eds.) (2006): *Korkeakoulutus teoriassa. Näkökulmia ja keskustelua*. Jyväskylä: Koulutuksen tutkimuslaitos, The University of Jyväskylä, 91–111.

Sadovnichii, Victor A. (2005): *Lomonosov Moscow State University 1755–2005*. Moscow: In-oktavo.

Sager, Peter (2005): *Oxford & Cambridge. An Uncommon History*. London: Thames & Hudson.

Sale, Joanna & Lohfeld, Lynne & Brazil, Kevin (2002): 'Revisiting the Qualitative–Quantitative Debate: Implications for mixed-methods research'. *Quality & Quantity* Volume 36, Number 4/2002, 43–53.

Sallinen, Aino (2003): 'Yliopistot, kansainvälisyys ja globalisaatio: muutospaineita ja mahdollisuuksia'. In Aittola, Helena (ed.) (2003): *€KG? Eurooppa, korkeakoulutus, globalisaatio?* Jyväskylä: Jyväskylä University Press, 5–22.

Salminen, Ari (ed.) (2000): *Hallintovertailun metodologia. Vaasan yliopiston julkaisuja: tutkimuksia 234, hallintotiede 26*. Vaasa: The University of Vaasa.

Sartori, Giovanni (ed.) (1984): *Social Science Concepts. A Systematic Analysis*. Beverly Hills & London & New Delhi: Sage Publications.

Sartori, Giovanni (1985): 'Faulty concepts'. In Lewis, Paul G. & Potter, David C. & Castles, Francis G. (eds.) (1985): *The Practice of Comparative Politics. A Reader. Second edition*. Essex: Longman & The Open University Press, 228–265.

Schimank, Uwe & Lange, Stefan (2009): 'Germany: A Latecomer to New Public Management'. In Paradeise, Catherine & Reale, Emanuela & Bleiklie, Ivar & Ferlie, Ewan (eds.) (2009b): *University Governance. Western European Comparative Perspectives*. [London]: Springer, 51–75.

Schwinges, Rainer Christoph (1992): 'Student Education, Student Life'. In Ridder-Symoens, Hilde de (ed.) (1992): *A History of the University in Europe. Volume I: Universities in the Middle Ages*. Cambridge: Cambridge University Press, 195–243.

Scott, Peter (ed.) (1998): *The Globalization of Higher Education*. London: The Society for Research into Higher Education & Open University Press.

Scott, Richard W. (2008): *Institutions and Organizations. Ideas and Interests*. Thousand Oaks: Sage Publications.

Scott, Richard W. & Davis, Gerald F. (2007): *Organizations and Organizing. Rational, Natural and Open System Perspectives*. Upper Saddle River, New Jersey: Pearson Education.

Shils, Edward & Roberts, John (2004): 'The diffusion of European models'. In Rüegg, Walter (ed.) (2004): *A History of the University in Europe. Volume III: Universities in the Nineteenth and Early*

Twentieth Centuries (1800–1945). Cambridge: Cambridge University Press, 163–230.

Smith, David N. & Adams, Jonathan (2009): 'Governance and the Autonomous University. Changing Institutional Leadership in UK and Australian Higher Education'. In Huisman, Jeroen (ed.) (2009): *International Perspectives on the Governance of Higher Education. Alternative Frameworks for Coordination*. New York: Routledge, 252–269.

Sipilä, Jorma (2007): *Valta yliopistossa*. Tampere: Vastapaino.

Skodvin, Ole-Jacob (1999): 'Mergers in Higher Education – success or failure?' *Tertiary Education and Management* Volume 5, Number 1/1999, 65–80.

Smelser, Neil J. (1976): *Comparative Methods in Social Sciences*. Englewood Cliffs: Prentice-Hall.

Sporn, Barbara (1995): 'Adaptation Processes at Universities. Organizational Implications of a Complex Environment'. *Tertiary Education and Management* Volume 1, Number 1/1995, 72–75.

Sporn, Barbara (1999): 'Towards More Adaptive Universities: Trends of Institutional Reform in Europe'. *Higher Education in Europe* Volume 24, Number 1/1999, 23–33.

Sporn, Barbara (2001): 'Building Adaptive Universities: Emerging Organisational Forms Based on Experiences of European and US Universities'. *Tertiary Education and Management* Volume 7, Number 1/2001, 121–134.

Standaert, Nicolas (2009): 'Pyramid, Pillar and Web'. In Barnett, Ronals & Guédon, Jean-Claude & Masschelein, Jan & Simons, Maarten & Robertson, Susan & Standaert, Nicolas (2009): *Rethinking the University after Bologna. New Concepts and Practices beyond Tradition and the Market*. Antwerpen: Universitair Centrum Sint-Ignatius Antwerpen, 39–53.

Steinhardt, Isabel & Schneiderberg, Christian & Götze, Nicolai & Baumann, Janosch & Krücken, Georg (2017): 'Mapping the Quality Assurance of Teaching and Learning in Higher Education: The Emergence of a Specialty?' *The International Journal of Higher Education Research* Volume 74, Number 2/2017, 221–237.

Suulamo, Simo (1987): *Pohjoismaisten yliopistojen toiminnan ja resurssien vertaileva selvitys. Helsingin yliopiston toimikuntien mietintöjä ja selvityksiä 36*. Helsinki: Helsinki University Press.

Syväjärvi, Antti (2013): 'Hallinnon tutkimus arkkitehtuurien rakentajana – Hallinnon arkkitehdit ja näkymätön käsi' *Hallinnon tutkimus* Volume 32, Number 3/2013, 177–178.

Szczepański, Jan (1978): *Systems of Higher Education: Poland*. New York: International Council for Educational Development (ICED).

Sörlin, Sverker (1996): 'Science And National Mobilisation In Sweden'. In Norrback, Märtha & Ranki, Kristiina (1996): *University and Nation. The University and the Making of the Nation in Northern Europe in the 19th and 20th Centuries*. *Studia Historica* 53. Helsinki: Finnish Historical Society, 31–41.

Sörlin, Sverker & Törnqvist, Gunnar (2000): *Kunskap för välstånd – Universiteten och omvandlingen av Sverige*. Stockholm: SNS Förlag.

Tankler, Hain (1996): 'Dorpat, a German-speaking International University in the Russian Empire'. In Norrback, Märtha & Ranki, Kristiina (1996): *University and Nation. The University and the Making of the Nation in Northern Europe in the 19th and 20th Centuries*. *Studia Historica* 53. Helsinki: Finnish

Historical Society, 91–100.

Tapper, Ted & Palfreyman, David (2000): *Oxford and the Decline of the Collegiate Tradition*. London: Woburn Press.

Tapper, Ted & Salter, Brian (1992): *Oxford, Cambridge and the Changing Idea of the University. The Challenge to Donnish Domination*. Buckingham: The Society for Research into Higher Education & Open University Press.

Teichler, Ulrich (1993): 'Structures of Higher Education Systems in Europe'. In Gellert, Claudius (ed.) (1993): *Higher Education in Europe. Higher Education Policy Series 16*. London: Jessica Kingsley Publishers, 23–36.

Teichler, Ulrich (2003): 'Internationalisation of Higher Education in Europe'. In Aittola, Helena (ed.) (2003): *€KG? Eurooppa, korkeakoulutus, globalisaatio?* Jyväskylä: Jyväskylä University Press, 37–52.

Teichler, Ulrich (2008): 'Diversification? Trends and Explanations of the Shape and Size of Higher Education'. *Higher Education* Volume 56, Number 3/2008, 349–379.

Teichler, Ulrich (2009): 'Between Over-diversification and Over-homogenization: Five Decades of Search for a Creative Fabric of Higher Education'. In Kehm, Barbara M. & Stensaker, Bjørn (eds.) (2009): *University Rankings, Diversity, and the New Landscape of Higher Education*. Rotterdam: Jessica Sense Publishers, 155–181.

Tella, Seppo (1994): *Luettavuuden ja luotettavuuden lähteillä. Opas lähteiden merkintään. Studia Paedagogica 5*. Helsinki: Helsinki University Press.

Temmes, Markku (2003): 'Hallintouudistusten epäonnistumiset – syyt ja seuraukset'. *Hallinnon tutkimus* Volume 22, Number 3/2003, 227–243.

Temmes, Markku (2011): 'Yliopistohallinto – mysteeri vai uudistumiskykyinen organisaatio?' *Hallinnon tutkimus* Volume 30, Number 4/2011, 279–291.

Temmes, Markku & Kiviniemi, Markku (1997): *Suomen hallinnon muuttuminen 1987-1995*. Helsinki: Ministry of Finance & University of Helsinki, Department of Political Science.

Tent, James F. (1988): *The Free University of Berlin. A Political History*. Bloomington: Indiana University Press.

Theisen, Gary & Adams, Don (1990): 'Comparative education research'. In Thomas, R. Murray (ed.) (1990): *International Comparative Education. Practices, Issues, & Prospects*. Oxford: Pergamon Press, 277–300.

Thompson, James D. (1967): *Organizations in Action: Social Science Bases of Administrative Theory*. New York: McGraw-Hill.

Tilly, Charles (1984): *Big Structures, Large Processes, Huge Comparisons*. New York: Russell Sage Foundation.

Tirronen, Jarkko (2010): *Yliopistoa etsimässä. Johdatus yliopiston ajatukseen. Publications of the University of Eastern Finland, General series 2*. Kuopio: University of Eastern Finland.

Tirronen, Jarkko (2014): 'Länsimaisen yliopistolaitoksen historiallinen kehitys'. In Pekkola, Elias &

Kivistö, Jussi & Kohtamäki, Vuokko (eds.) (2014): *Korkeakouluhallinto. Johtaminen, talous ja politiikka*. Helsinki: Helsinki University Press, 39–70.

Tomusk, Voldemar (2000): *The Blinding Darkness of the Enlightenment. Towards the Understanding of Post State-Socialistic Higher Education in Eastern Europe. Research Report 53, Research Unit for the Sociology of Education (RUSE)*. Turku: University of Turku.

Tuori, Kaarlo (1987): 'Korporaatioprivilegioista tutkimuksen ja opetuksen vapauteen'. In Mäkelä, Klaus (ed.) (1987): *Tieteen vapaus ja tutkimuksen etiikka*. Helsinki: Tammi, 63–89.

University of Helsinki (2000): *Helsingin yliopiston tiedekunta- ja laitosrakenteen kehittäminen. Rakennetyöryhmän muistio ja konsistorin asiasta tekemät päätökset vuonna 2000. Helsingin yliopiston toimikuntien mietintöjä ja selvityksiä 77*. Helsinki: Helsinki University Press.

University of Helsinki (2002a): *Helsingin yliopiston kampusrakennemuutos. Yliopiston kampusrakennetyöryhmän muistio ja tarkennettu ehdotus sekä konsistorin päätökset. Helsingin yliopiston toimikuntien mietintöjä ja selvityksiä 79*. Helsinki: Helsinki University Press.

University of Helsinki (2002b): *Helsingin yliopiston kampusrakennemuutos. Helsingin yliopiston toimikuntien mietintöjä ja selvityksiä 79. Liite 1. Keskustakampustyöryhmän mietintö*. Helsinki: Helsinki University Press.

University of Helsinki (2005): *Towards University Governance. Report on the External Evaluation of the Administration of the University of Helsinki 2004–2005. University of Helsinki Administrative Publications 14/2005*. Helsinki: The University of Helsinki.

Ursin, Jani & Saarinen, Taina (2013): 'Vallitsevia ja nousevia lähestymistapoja korkeakoulupolitiikan muutoksen tutkimukseen'. *Tiedepolitiikka* Volume 38, Number 1/2013, 7–16.

Uusitalo, Paavo (1995): 'Kollegiaalinen vai päällikkövaltainen yliopistohallinto?' In Uusitalo, Paavo & Lipponen, Jukka (eds.) (1995): *Yliopisto ja valtiovalta. Yliopistolaki ja sen perustelut*. Helsinki: Gaudeamus, 112–142.

Vaira, Massimiliano (2004): 'Globalization and Higher Education Organizational Change: A Framework for Analysis' *Higher Education* Volume 48, Number 4/2004, 483–510.

Vaira, Massimiliano (2009): 'Towards Unified and Stratified Systems of Higher Education? System Convergence and Organizational Stratified Differentiation in Europe'. In Kehm, Barbara M. & Stensaker, Bjørn (eds.) (2009): *University Rankings, Diversity, and the New Landscape of Higher Education*. Rotterdam: Jessica Sense Publishers, 135–153.

Vakkuri, Jarmo (2002): 'Organisaation sääntöjärjestelmän kehittyminen, esimerkkinä Stanfordin yliopisto' *Hallinnon tutkimus* Volume 21, Number 3/2002, 305–309.

Vanttaja, Marko & Ketonen, Kimmo (1995): *Korkeakoululaitoksen rakenteellinen kehittäminen. Tapaustutkimus lääketieteen ja kasvatustieteen koulutusaloilta. Research Report 28, Research Unit for the Sociology of Education (RUSE)*. Turku: University of Turku.

Verhoest, Koen & Van Thiel, Sandra & Bouckaert, Geert & Lægreid, Per (eds.) (2012): *Government Agencies. Practices and Lessons from 30 Countries*. Houndmills: Palgrave MacMillan.

Verger, Jacques (1992): 'Patterns'. In Ridder-Symoens, Hilde de (ed.) (1992): *A History of the University in Europe. Volume I: Universities in the Middle Ages*. Cambridge: Cambridge University

Press, 35–74.

Viinamäki, Olli-Pekka (2007): 'Ekvivalenssin ongelma vertailututkimuksessa' *Hallinnon tutkimus* Volume 26, Number 2/2007, 3–12.

Viljamaa, Kimmo & Lehenkari, Janne & Lemola, Tarmo & Tuominen, Terhi (2010): *Tutkimuspolitiikan välineet ja käytännöt – Viiden maan vertailu. Suomen Akatemian julkaisuja 2/10*. Helsinki: The Academy of Finland.

Virtanen, Aimo & Mertano, Sinikka (eds.) (1999): *Learning by Comparing. The Benchmarking of Administration at the University of Helsinki. Publications of Higher Education Evaluation Council 12:1999*. Helsinki: Edita.

Virtanen, Aki (2002): *Uudella koulutuksella uudelle vuosituhannele. Suomen 1990-luvun koulutuspolitiikka. Opetusministeriön koulutus- ja tiedepolitiikan osaston julkaisusarja 95*. Helsinki: Ministry of Education.

Virtanen, Keijo (2001): '(Yli)pitkät akateemiset perinteet'. *Aurora* Volume 8, Number 4/2001, 3–4.

Virtanen, Turo (2008): 'Merging and Privatising to Reach for the Top: A New Finnish University of Technology, Business, and Art and Design'. In Aarrevaara, Timo & Maruyama, Fumihiko (eds.) (2008): *University Reform in Finland and Japan*. Tampere: Tampere University Press, 53–76.

Välimaa, Jussi (1997): 'Integraatio, differentiaatio ja Clarkin kolmio'. In Välimaa, Jussi (ed.) (1997): *Korkeakoulutus kolmiossa. Näkökulmia korkeakoululaitoksen muutoksiin*. Jyväskylä: Koulutuksen tutkimuslaitos, The University of Jyväskylä, 13–34.

Välimaa, Jussi (2013): 'Voiko korkeakoulutuksen reformeja hallita?' *Tiedepolitiikka* Volume 38, Number 1/2013, 47–53.

Välimaa, Jussi & Hoffman, David M. (2016): 'Introduction to the Book and the Comparative Study'. In Hoffman, David M. & Välimaa, Jussi (eds.) (2016): *Re-becoming Universities? Higher Education Institutions in Networked Knowledge Societies*. Dordrecht: Springer, 3–11.

Walford, Geoffrey (1987): *Restructuring Universities: Politics and Power in the Management of Change*. London: Croom Helm.

Weber, Max (1909): 'Yliopistojen opetusvapaudesta'. In Kantasalmi, Kari (ed.) (1990): *Yliopiston ajatusta etsimässä*. Helsinki: Gaudeamus, 104–111.

Weber, Max (1949): *The Methodology of the Social Sciences*, translated and edited by Edward A. Shils & Henry A. Finch with a foreword by Edward A. Shils. Glencoe: The Free Press.

Weber, Max (1978a): *Economy and Society. An Outline of Interpretive Sociology. Volume 1*, translated and edited by Guenther Roth & Claus Wittich. Berkeley & Los Angeles & London: University of California Press.

Weber, Max (1978b): *Economy and Society. An Outline of Interpretive Sociology. Volume 2*, translated and edited by Guenther Roth & Claus Wittich. Berkeley & Los Angeles & London: University of California Press.

Weber, Max (2012): *Collected Methodological Writings*, translated by Hans Henrik Bruun and edited Hans Henrik Bruun & Sam Whimster. London & New York: Routledge.

Wexionius, Michael (1642): *Discursus Politicus De Prudentia*. Aboae (Turku): Petrus Wald, Acad. Typographus.

Wexionius, Michael (1644): *Discursus De Acadeemiis Earumque Statu & Juribus*. Aboae (Turku): Petrus Wald, Acad. Typographus.

Whitchurch, Celia (2012): 'Expanding the parameters of academia'. *Higher Education* Volume 64, Number 1/2012, 99–117.

Wiberg, Matti (1995): 'Yliopisto-ongelmat'. In Wiberg, Matti (ed.) (1995): *Yliopisto uusiksi!* Helsinki: Gaudeamus, 12–23.

Williams, Ruth (1997): 'Quality Assurance and Diversity. The Case of England'. In Brennan, John & de Vries, Peter & Williams, Ruth (eds.) (1997): *Standards and Quality in Higher Education. Higher Education Policy Series 37*. London: Jessica Kingsley Publishers, 104–118.

Wirt, Frederick M. (1986): 'Comparing Educational Policies: Theory, Units of Analysis, and Research Strategies'. In Altbach, Philip G. & Kelly, Gail P. (1986): *New Approaches to Comparative Education*. Chicago: The University of Chicago Press, 275–292.

Wolin, Sheldon S. (2006): *Politics and Vision. Continuity and Innovation in Western Political Thought. Fourth, Expanded Edition*. Princeton: Princeton University Press.

Wyatt, John (1990): *Commitment to Higher Education*. Buckingham: Society for Research into Higher Education & Open University Press.

Zanasi, Fabia (1988): *University of Bologna. Places and Museums*. Bologna & Milan & Rome: Officine Grafiche Calderini.

Zelditch, Morris Jr. (1971): 'Intelligible Comparisons'. In Vallier, Ivan (ed.) (1971): *Comparative Methods in Sociology: Essays on Trends and Applications*. Berkeley: University of California Press, 267–308.

Zgaga, Pavel & Klemenčič, Manja & Komljenović, Janja & Miklavič, Klemen & Repac, Igor & Jakačić, Vedran (2013): *Higher Education in the Western Balkans: Reforms, Developments, Trends*. Ljubljana: Centre for Educational Policy Studies, University of Ljubljana.

Appendix 1. An Overview of the European Universities in the Research Data

The 106 universities included in the research data (per the year 1962 at the start of the study period, before and not including their later merged, reformed or divided parts) with their official names both in their original language as well as English are presented in Table 9.

EUA / IAU data univ. #	Founding year (earliest status as a university)	Followed HES model (as per 1962)	University Name in original language (as per 1962)	University Name in English (as per 1962) (City also included when it is not clearly a part of the name)
1	1088 (11 th c.)	Fispv	Università degli Studi di Bologna	University of Bologna
2	1150 (12 th c.)	F	Université de Paris	University of Paris
3	1167 (12 th c.)	B	University of Oxford	University of Oxford
5	1209	B	University of Cambridge	University of Cambridge
6	1218	Fispv	Universidad de Salamanca	University of Salamanca
11	1241	Fispv	Università degli Studi di Siena	University of Siena
13	1290	Fispv	Universidade de Coimbra	University of Coimbra
14	1303	Fispv	Università degli Studi di Roma	University of Rome
19	1348	GScs	Karlova universita	Charles University (Prague)
23	1364	GRSbp	Uniwersytet Jagielloński	Jagellonian University (Cracow)
24	1365	Gah	Universität Wien	University of Vienna
27	1388	G	Universität zu Köln	University of Cologne
32	1409	F	Université d'Aix-Marseille	University of Aix-Marseilles
34	1411	BFGs	University of St Andrews	University of St Andrews
101	1423	F	Université de Besançon	University of Besançon
37	1425	FGdbl	Université Catholique de Louvain	Catholic University of Louvain
39	1432	F	Université de Caen	University of Caen
42	1450	Fispv	Universidad de Barcelona	University of Barcelona
44	1456	GS	Ernst-Moritz-Arndt-Universität Greifswald	Ernst Moritz Arndt University of Greifswald
46	1459	FGs	Universität Basel	University of Basle
52	1477	Gn	Kungliga Universitetet i Uppsala	Royal University of Uppsala
50	1479	Gn	Københavns Universitet	University of Copenhagen
60	1501	Fispv	Universidad de Santiago de Compostela	University of Santiago de Compostela
57/102	1502	GS	Martin-Luther-Universität Halle-Wittenberg	Martin Luther University of Halle-Wittenberg
63	1540	Fispv	Università degli Studi di Macerata	University of Macerata
70	1551	Fispv	Pontificia Universitas Gregoriana	Pontifical Gregorian University (Rome/Vatican)
29	1561	GSah	Eötvös Lóránd Tudományegyetem	Eötvös Lóránd University of Budapest
76	1575	FGdbl	Rijksuniversiteit te Leiden	University of Leyden
74	1576	GScs	Palackého universita	Palacky University (Olomouc)
78	1579	GRSbp	Vilniaus Valstybinis V. Kapsuko Universitetas	Vilnius V. Kapsukas State University
79	1583	BFGs	University of Edinburgh	University of Edinburgh
82	1585	Gah	Karl-Franzens-Universität Graz	University of Graz
84/138	1592	Bi	Ollscoil Átha Cliath	University of Dublin, Trinity College

EUA / IAU data univ. #	Founding year (earliest status as a university)	Followed HES model (as per 1962)	University Name in original language (as per 1962)	University Name in English (as per 1962) (City also included when it is not clearly a part of the name)
86	1607	G	Justus-Liebig-Universität Giessen	Justus Liebig University of Giessen
87	1614	FGdbl	Rijksuniversiteit Groningen	State University, Groningen
93	1632	GRSbp	Tartu Riiklik Ülikool	Tartu State University
95	1640	GRf	Helsingin Yliopisto	University of Helsinki
97	1661	RSbum	L'vovskij Gosudarstvennyj Universitet im. Ivana Franko	Lviv State University
99	1666	Gn	Kungliga Karolinska Universitet i Lund	University of Lund
142	1669	FSy	Sveučiliste u Zagrebu	University of Zagreb
103	1702	GRSbp	Uniwersytet Wrocławski im. Bolesława Bieruta	Wrocław University
104	1722	F	Université de Dijon	University of Dijon
105	1724	RS	Leningradskij Gosudarstvennyj Universitet im. A. A. Ždanova	Leningrad State University
109	1755	RS	Moskovskij Ordena Lenina i Ordena Trudovogo Krasnogo Znameni Gosudarstvennyj Universitet im. M. V. Lomonosova	Moscow State University
972	1769	B	Royal University of Malta	Royal University of Malta
111	1772	Fispv	Università degli Studi di Modena	University of Modena
976	1792	Fispv	Universidad de La Laguna	University of La Laguna
116	1808	F	Facultés Catholiques de Lyon	Catholic Faculties of Lyons
118	1810	GS	Humboldt-Universität zu Berlin	Humboldt University, Berlin
119	1810	FSy	Univerza v Ljubljani	University of Ljubljana
120	1811	Gn	Universitetet i Oslo	University of Oslo
123	1816	FGdbl	Rijksuniversiteit te Gent	State University of Ghent
133	1826	B	University of London	University of London
128	1832	B	University of Durham	University of Durham
131	1834	FGdbl	Université Libre de Bruxelles	Free University of Brussels
132	1834	RSbum	Kievskij Gosudarstvennyj Universitet im. T. G. Ševčenko	Kiev State University
135	1837	Ggt	Athinisin Ethikon kai Kapodistriakon Panepistimion	University of Athens
136	1845	B	Queen's University Belfast	Queen's University Belfast
115	1854	F	Université de Clermont-Ferrand	University of Clermont-Ferrand
284	1855	FGs	Eidgenössische Technische Hochschule	Swiss Federal Institute of Technology (Zürich)
139	1860	FSbr	Universitatea Alexandru Ioan Cuza	Alexandru Ioan Cuza University (Iași)
140	1864	FSbr	Universitatea Constantin Ion Parhon	Constantin Ion Parhon University (Bucharest)
242	1865	Gah	Technische Hochschule in Graz	Technical University of Graz
295	1868	G	Technische Hochschule München	Technical University of Munich
154	1880	FGdbl	Vrije Universiteit	Free Reformed University (Amsterdam)
305	1887	Ggt	Ethnikon Metsovion Polytechnion	National Technical University of Athens
156	1889	FGs	Université de Fribourg	University of Fribourg
158	1893	B	University of Wales	University of Wales (Cardiff)
160	1900	Ggt	İstanbul Üniversitesi	University of Istanbul
325	1902	Fispv	Università Commerciale Luigi Bocconi	Bocconi University (Milan)

EUA / IAU data univ. #	Founding year (earliest status as a university)	Followed HES model (as per 1962)	University Name in original language (as per 1962)	University Name in English (as per 1962) (City also included when it is not clearly a part of the name)
164	1904	FSbr	Sofiiski Daržaven Universitet	State University of Sofia
165	1905	B	University of Sheffield	University of Sheffield
166	1905	FSy	Univerzitet u Beogradu	University of Belgrade
330	1906	Fispv	Politecnico di Torino	Polytechnic Institute of Turin
334	1908	GRf	Teknillinen Korkeakoulu	Institute of Technology (Helsinki)
340	1910	Gn	Norges Tekniske Høgskole	Technical University of Norway (Trondheim)
171	1911	Gn	Háskóla Íslands	University of Iceland (Reykjavik)
177	1917	GRf	Åbo Akademi	Åbo Academy (Turku)
178	1917	GS	Permskij Gosudarstvennyj Universitet im. A. M. Gor'kogo	Perm State University
47	1919	GScs	Univerzita Komenského	Comenius University (Bratislava)
193	1919	GRSbp	Latvijskij Gosudarstvennyj Universitet im. Petra Stučki	Latvian State University (Riga)
195	1920	GRSbp	Katolicki Uniwersytet Lubelski	Catholic University of Lublin
197	1920	Fispv	Università Cattolica del Sacro Cuore	Catholic University of the Sacred Heart (Milan)
201	1920	RSbum	Belorusskij Gosudarstvennyj Universitet im. V. I. Lenina	Byelorussian State University (Minsk)
402	1920	FGdbl	Faculté Polytechnique de Mons	Polytechnical Faculty of Mons
205	1921	GSah	Pécsi Tudományegyetem	University of Pécs
209	1923	FGdbl	Katholieke Universiteit te Nijmegen	Catholic University of Nijmegen
372	1930	Fispv	Universidade Técnica de Lisboa	Technical University of Lisbon
216	1934	Gn	Aarhus Universitet	University of Aarhus
974	1937	Gn	Chalmers Tekniska Högskola	Chalmers Institute of Technology (Gothenburg)
218	1940	Fispv	Universidad Pontificia de Salamanca	Pontifical University of Salamanca
674	1945	RGSbp	Politechnika Gdańska	Technical University of Gdańsk
975	1945	RSbum	Užgorodskij Gosudarstvennyj Universitet	Uzhgorod State University
973	1946	RSbum	Kišinevskij Gosudarstvennyj Universitet	Kishinev State University
544	1948	G	Freie Universität Berlin	Free University of Berlin
685	1948	FSbr	Institutul Politehnic Timișoara	Technical Institute of Timișoara
412	1949	FSy	Univerzitet u Sarajevu	University of Sarajevo
656	1949	FSy	Univerzitet vo Skopje	University of Skopje
801	1952	GScs	Vysoká škola technická v Košiciach	Technical University of Košice
934	1955	B	University of Exeter	University of Exeter
386	1957	FSa	Universiteti Shtetëror i Tiranës	Tirana State University
700	1957f	RS	Dagestanskij Gosudarstvennyj Universitet im. V. I. Lenina	Daghestan State University (Mahaç-Kala)
971	1957	FGdbl	Université Internationale de Sciences Comparées	International University of Comparative Sciences (Luxemburg)
447	1958	GRf	Oulun Yliopisto	University of Oulu
705	1959	RS	Universitet Družby Narodov im. Patrisa Lumumby	Patrice Lumumba Peoples' Friendship University (Moscow)
790	1960	FSy	Univerzitet Novi Sad	University of Novi Sad

Table 9. The universities included in the research data at the start of the study period (in 1962).

Appendix 2. The University Model and HES Model Categories in the Research Data

The university model categories (period from 11th to 19th century) and their corresponding HES model adaptation categories (period of 20th century onwards) with their abbreviations are the following:

Coding	Period	Category legend
B	20 th c.	British (English, Welsh, Northern Irish, Maltese)
BFGs	20 th c.	Amalgamated British, French & German, Scottish adaptation
Bi	20 th c.	British, Irish adaptation
Ena	16 th to 18 th c.	Early (Modern,) North American
Ep-e	16 th to 18 th c.	Early Modern, Pan-European
Esa	16 th to 18 th c.	Early (Modern,) South American
F	20 th c.	French
Fa	20 th c.	French, Albanian adaptation
FGdbl	20 th c.	Amalgamated French & German, Dutch/Belgian/Luxemburger adaptation
Fbr	20 th c.	French, Bulgarian/Romanian adaptation
FGs	20 th c.	Amalgamated French & German, Swiss adaptation
Fispv	20 th c.	French, Italian/Spanish/Portuguese/Vatican adaptation
Fy	20 th c.	French, Yugoslavian (Bosnia & Herzegovinian/Serbian/Croatian/Slovenian/Montenegrin/Macedonian) adaptation
G	20 th c.	German
Gah	20 th c.	German, Austrian/Hungarian adaptation
Gch	20 th c.	German, Czechoslovakian (Czech/Slovak) adaptation
Ggt	20 th c.	German, Greek/Turkish adaptation
Gn	20 th c.	German, Nordic (Swedish, Danish, Norwegian, Icelandic) adaptation
GRbp	20 th c.	Amalgamated German & Russian, Baltic (Lithuanian/Latvian/Estonian)/Polish adaptation
GRf	20 th c.	Amalgamated German & Russian, Finnish adaptation
Mb	11 th to 15 th c.	Medieval, Bolognese
Mp	11 th to 15 th c.	Medieval, Parisian
NB	19 th c.	National British (a historical adaptation of the Newmanian ideal type)
NF	19 th c.	National French (a historical adaptation of the Napoleonic ideal type)
NG	19 th c.	National German (a historical adaptation of the Humboldtian ideal type)
NR	19 th c.	National Russian (a historical adaptation of the Alexandrian ideal type)
R	20 th c.	Russian
Rbum	20 th c.	Russian, Belarusian/Moldovan/Ukrainian adaptation
S	20 th c.	Soviet or Soviet-influenced (used only as an amalgamate extension category of Soviet-influenced HEIs in Russia and Eastern Europe, from 1922 to 1991)

Appendix 3. The Organisational Configuration Unit Categories and Their Extra Specialisation Attributes in the Research Data

The actual university configuration organisation unit categories with their abbreviations are the following:

A	Academy
Ar	Area
C	College
Ca	Campus
Ce	Centre/Center
CF	Core Facility
Cl	Clinic
Co	Conservatory/Conservatoire
D	Department
Div	Division
F	Faculty
Fe	Federation
Fo	Foundation
GP	Group
I	Institute
L	Laboratory
N	Nation
P	Program(me)
RC	Research College
RCe	Research Centre
RD	Research Department
RGP	Research Group
RI	Research Institute
RL	Research Laboratory
RU	Research Unit
S	School
Sec	Section
Sem	Seminar(y)
SG	Studium Generale
Soc	Society
Sr	Sector
St	Station
Ut	Unit
U	University (as a whole)
[+]	Other facilities (observatories, gardens, university hospitals etc.)

The extra specialisation attributes for the augmenting of the above unit categories with their abbreviations are the following:

*A	Affiliate / Associate / Remote (located in a city/town other than parent HEI)
*B	Umbrella (a regrouping category of existing organisation units instead of an actual unit itself)
*D	Undergraduate (1 st cycle) (relates to level of students)
*E	European-level / EU affiliated (relates to level of activity)
*F	For foreigners only / for a specific language-group only (relates to type of students)
*G	Graduate (2 nd cycle) / Postgraduate (3 rd cycle) / Doctoral / Refresher / Continuing / Further /

- Lifelong (relates to level of students)
- *H Higher / Advanced / Professional / Post-Degree (relates to level of students and/or activity)
- *I (Inter-)University / Inter-Faculty / Interdisciplinary / Multi-disciplinary (relates to level of activity)
- *L For handicapped / disabled only (relates to type of students)
- *M For men only (relates to type of students)
- *N National / Federal / Royal / Imperial / Pontifical (relates to level of activity)
- *O Open / Adult / External / Extra-mural / Evening course or studies / Popular / Correspondence / (Long) Distance Education / Tele-Education / Religious (confessional) oriented / For workers and peasants (relates to level and/or type of students)
- *P Preparatory (relates to level of students)
- *Q For women only (relates to type of students)
- *R Regional / Local (relates to level of activity)
- *S Shared / Joint (unit shared with another university or HEI)
- *T For most talented students only (relates to type of students)
- *U Unlisted (a unit factually existing, though missing from an official listing)
- *V Vocational (relates to level of students)
- *W World / International / Global / UNESCO affiliated (relates to level of activity)

Appendix 4. The Mintzbergian Organigram Interpretation Drawing Method, Its Notation Method and the Analysis Notation Case Examples

The Mintzbergian organigram interpretation depicts a university’s formal hierarchy of units and levels of its organisational structures in a condensed form, and is thus a simplified version of a full Mintzbergian organigram. The notation is an even more condensed version of basically the same information. Both methods of condensing the information of organisational structures of the data are demonstrated below with examples. These are followed by all of the notation examples mentioned in the empirical analysis.

The Mintzbergian organigram interpretation drawing method is demonstrated with the medieval examples discussed in 4.2. Drawn as a hierarchy of units of its professional organisation only, the medieval *studium generale* (SG) of Bologna of the 13th century, with its two ‘universities’ (U), themselves composed of a total of 18 nations (N) representing the regions on both sides of the Alps mountains (see 4.2.5), is drawn as follows:

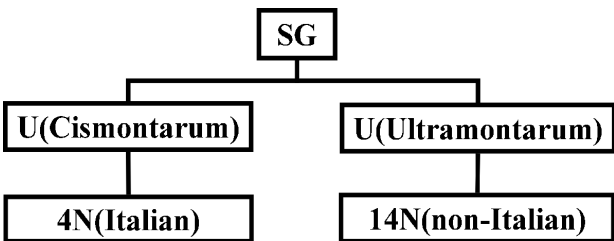


Figure 67. The Medieval University of Bologna as a Mintzbergian Organigram Interpretation.

Here the two ‘universities’ (U) and the 18 nations (N) make up the operating core, while the middle line represents a hierarchy of three levels of organisation. The same organisation in the even more condensed notation form is thus represented as:

SG (The *studium generale* at the strategic apex or ‘university’ level, henceforth called as the U level)
2U (2 ‘universities’ at the level below, henceforth called as the U-1 level)
18N (18 nations at the level below the universities, henceforth called as the U-2 level)

Similarly, the medieval 12th century University of Paris with its four faculties (F) and four nations (N) under the arts faculty (see 4.2.4 for reference), represented in the Mintzbergian organigram interpretation form, is drawn as follows:

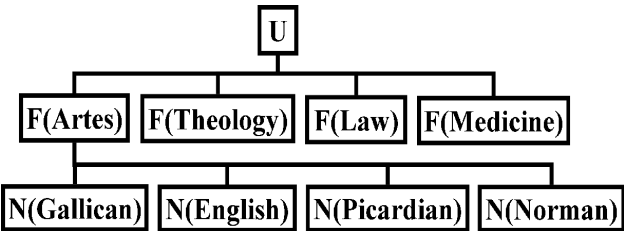


Figure 68. The Medieval University of Paris as a Mintzbergian Organigram Interpretation.

Here the four faculties (F) and the four nations (N) make up the operating core, while the middle line represents a hierarchy of three levels of organisation. The same organisation in the even more condensed

notation form is thus represented as:

- U (The university at the strategic apex, at the U level)
- 4F (four faculties at the level below, at the U-1 level)
- 4N (four nations at the level below the faculties, at the U-2 level)

The research data contains the operationalisations of the professional organisations of all of the 106 European universities six times each, with about ten-year intervals from 1962 to 2013. This makes a total of 721 such operationalisations. Like Birnbaum, who demonstrated the variety of types of organisations of HEIs by using organisational models in his classic book *How Colleges Work* (Birnbaum 1988, 84–174), the same is done here with universities from the data in order to demonstrate the wide breadth in the organisational forms found. A range of four university organisation operationalisations is presented as examples, so that they also exemplify universities of various sizes and shapes as well as ones affiliated with each of the four HES models.

Only eight operationalisations (out of 721) of three individual universities have only one organisational level at some phase. *Pécsi Tudományegyetem* (the University of Pécs) in 1962, representing the Soviet-influenced Austrian/Hungarian adaptation of the German HES model (GSah), was a small Hungarian university with a single faculty of Law and Political Science. The university had just 818 students and an academic staff of 40. Since the faculty (F) also encompassed the entire university (U), as F was the only unit and the U level simultaneously, its organisation in the notation form is represented just as:

U(=F)

A total of 408 operationalisations of 110 individual universities have two organisational levels at some phase, and it is thus the most common number of levels. *Permskij Gosudarstvennyj Universitet* (the Perm State University) in 1993, representing the Russian university model (R), was the capital university of the peripheral Perm State of the Russian Federation. Having been founded as an affiliate department (D) of the University of St. Petersburg before becoming independent university (U), it had inherited from its paragon a simple and straightforward organisation of equal faculties (F) for a medium-sized student population of 10 350 and an academic staff of 660. The only other units were departments for evening and correspondence studies (D*O). The university's organisation in the notation form is represented as:

U
10F 2D*O

A total of 278 operationalisations of 92 individual universities have three organisational levels at some phase, and it is thus the second most common number of levels. The University of Durham in 1985 was a private institution and a native representative of the British university model (B). It is a county university with variegated history of merging and dividing the various colleges in northeast England. It had a small student population of 4 886 and an academic staff of 463. In the university (U), a system of colleges (C) coexists with a system of faculties (F), two of which also have departments (D) and schools (S), and others with laboratories (L) under them. There is also an interdisciplinary Institute of European studies (I*I), a Centre (Ce) of Middle Eastern and Islamic studies, an astronomical observatory (+1) as well as a joint organisation and methods unit together with nine other regional British universities (Ut*S). The organisation in the notation form is represented as:

U
14C 6F 1I*I 1Ce 1Ut*S +1 (Observatory)
8D 2S 10L

A total of 27 operationalisations of 14 individual universities have even four organisational levels at some

phase, and it is thus also a quite uncommon number of levels. *Sveučilište u Zagrebu* (the University of Zagreb) in 2013 was a Croatian adaptation of the French university model (Fy) and the oldest as well as the third-largest university in southeastern Europe that according to its own depiction ‘just keeps on growing’. It has a giant student population of 72 480 and an academic staff of 7 915. A vast organisation of 27 faculties (F) paralleled with three art academies (A), two schools (S) and four colleges (C) has an extensive sub-organisation of hundreds of departments (D) and other units, many of which also have sub-departments (D), however with a ‘lighter’ departmental organisation. The university (U) also has an astronomical observatory (+1) and a botanical garden (+1). Composed of 521 units of education and research, the university as a Mintzbergian interpretation is over 500 times more complex than the first-mentioned University of Pécs in 1962! This comparison alone demonstrates compelling evidence of the tremendous versatility of universities as a ‘species’ of organisation in the Durkheimian sense (see 2.2.1). The organisation of the University of Zagreb in the notation form is represented as:

U
27F 3A 2S 4C +2 (Observatory and Garden)
369D 6I 7Ce 1C1 2L
93D 4C1 1Ce

The notation examples mentioned in the empirical analysis in their numerical order are the following:

Notation case 1 (from 5.2.2): *Katholieke Universiteit Leuven* (the Catholic University of Louvain (Dutch))

2003:		2013:
U		U
14F 3I 1S	>>>>	3GP 3I 3Ce
		14F 28D 1I

Notation case 2 (from 5.2.3): *Helsingin yliopisto* (the University of Helsinki)

1962:		1974:		1983:
U		U		U
7F 1D +2	>>>>	7F 4I 1RI 1Ce 1L +2	>>>>	8F 4I 1RI 3Ce 1L +2
70I		4I 118D		200D

Notation case 3 (from 5.2.4): *Université de Dijon/Bourgogne* (the University of Burgundy, Dijon)

1962:		1974:		1983:		1993:		2003:
U	>>>>	U	>>>>	U	>>>>	U	>>>>	U
3F 1S 2I 3Ce		9F 2Ut 4I 2Ce		11Ut 5I 2Ce		9F 2Ut 6I 1Ce		11Ut 2S 14I 2Ce

Notation case 4 (from 5.2.4): *Humboldt-Universität zu Berlin* (the Humboldt University, Berlin)

1962:		1974:		1983:		1993:
U	>>>>	U	>>>>	U	>>>>	U
11F 1D 2I		27Sec		28Sec 2I		26F 1I
180I 20C1						

Notation case 5 (from 5.2.4): *Chalmers Tekniska Högskola* (the Chalmers Institute/University of Technology (Gothenburg))

1962:		1974:		1983:		1993:		2003:		2013:
U	>>>	U	>>>	U	>>>	U	>>>	U	>>>	U
7D		6D 3RI		6S 3D 3RI +1		7S 1C +1		10S 1C 1Ce +1		18D +1

Notation case 6 (from 5.2.7): *Université Catholique de Lyon* (the Catholic University of Lyons)

2003:		2013:
U		U
5F 9I 4Ce 6S 2D	>>>	5F
		7I 2S 6Ce 1L

Notation case 7 (from 5.2.7): University of Cambridge

2003:		2013:
U		U
14F 32C 1S 7D 16I 5Ce 1L 1RI +4	>>>	6S 32C 1I 2Ce +2
24D 7Ce		14F 7D 13I 5Ce 1L 1RI
		35D 9Ce 1I +2

Notation case 8 (from 5.3.2): *Université d'Aix-Marseille* (the University of Aix-Marseilles) > I / II / III
> *Aix-Marseille Université* (the Aix-Marseilles University)

1962 (unified):		1974 (I, II, III):		1983 (I, II, III):	
		I: U	>>>	I: U	>>>
		15Ut 3I 1S 2Ce +1		15Ut 3I 2Ce +1	
U					
4F 5I 1Ce	>>>	II: U	>>>	II: U	>>>
11I 2S +2		4F 5Ut 4I		5F 1Ut 7I 3Ce	
		III: U	>>>	III: U	>>>
		7Ut 8I 1S		3F 5Ut 8I 2S 1Ce	
1993 (I, II, III):		2003 (I, II, III):		2013 (again unified):	
I: U	>>>	I: U	>>>		
15Ut 3I 2Ce +1		9Ut 2I 1S 3D 1Ce +1		U	
				5Sr 4I	
II: U	>>>	II: U	>>>	1Ut 7F 3S 4I 1Ce +1	
4F 2Ut 6I 3Ce 1D 4RCe		5F 2Ut 1Ar 3S 13I 2Ce		58D 35Ce 42I 53L 2Sr 5Ar 6RCe 36RU 4Ut +5	
III: U	>>>	III: U	>>>		
3F 4Ut 9I 2S 2Ce		9Ut 4Ar 2S 18I 1Ce 16RCe			

Notation case 9 (from 5.3.2): *Università degli Studi di Roma* / later *Sapienza* – *Università di Roma* (the University of Rome / later University of Rome La Sapienza)

1962:		1974:		1983:		1993:		2003:		2013:
U	>>>	U	>>>	U	>>>	U	>>>	U	>>>	U
10F 2S +1		11F 2S 1I +1		11F 2S 1I +1		11F 2S 1I +1		19F 2S +1		11F 2S +3
175I/CI		153I/CI		200I/CI		200I/CI		106I/D		63D

Notation case 10 (from 5.3.3): The (National and Capodistrian) University of Athens

1993:		2003:		2013:
U	>>>	U	>>>	U
5F +4		8S 25F +4		8S +4
24D				30D 1S

Notation case 11 (from 5.4.1): *Sofiiski Daržaven Universitet* / later *Sofiiski Universitet Sv. Kliment Ohridski* (the Sofiiski Daržaven Universitet / later St. Kliment Ohrid Sofia University)

1962:		1974:		1983:		1993:		2003:		2013:
U	>>>	U	>>>	U	>>>	U	>>>	U	>>>	U
5F 1D		10F 1L		11F 1L +1		15F 1L		15F 4L 1I 8Ce		16F 1Ce +1
41D		67D		73D 1Ce		106D 1Ce 1L		114D 1Ce 1L 1I		130D 3Ce 6L

Notation case 12 (from 5.4.1): University of Exeter

1962:		1974:		1983:		2013:
U	>>>	U	>>>	U	>>>	U
4F 1I +1		6F 3I 1S 1D 1L +2		6F 1I 4S 1D 2Ut 6Ce +2		
18D 7L		24D 8L		23D 8L 1Ce		
1993:		2003:		2013:		
U	>>>	U	>>>	U		
5F 1I 1S 6Ce +1		17S 1I 7Ce +1		6C 1S		
18D 2S 1Ce		1D 1Ce		22D 8S 7I 1Ce		

Notation case 13 (from 5.4.1): *Univerzitet vo Skopje* / later *Univerzitet 'Kiril i Metodij' Skopje* (the University of Skopje)

1962:		1974:		1983:
U	>>>	U	>>>	U
7F		9F 3I +1		26F 6I 2A

Notation case 14 (from 5.4.2): *Norges Tekniske Høgskole* (the Technical University of Norway (Trondheim)) / *Universitetet i Trondheim* (the University of Trondheim)

1974:		1983:		1993:		2003:
U	>>>	U	>>>	U	>>>	U
1I 1C 1Soc 1St		1I 1C 1Soc 1St		2I 1C 1St +1		7F 1St 1Ce +2
11D 3F		11D 4F 1I		12D 3F		52D 3P 1Ce

Political Science / Research into Higher Education

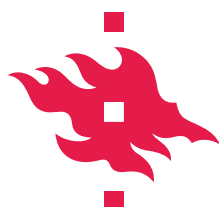
Arto Aniluoto

'At Once So Uniform and So Diverse' – A Comparative Study of the Organisational Structures of Well-Established European Universities from 1962 to 2013

The intense contemporary scholarly discussion on the convergence versus divergence claims of universities has so far mostly not reached the actual empirical change dynamics of the universities' organisational structures at their population level. This book compares the long-term development in the organisational structures of a large group of well-established European universities, and clarifies the evolution of historical university models, through which both the organisational structures of universities and the higher education systems of European countries have been born, developed and replicated.

The study utilises Henry Mintzberg's 'structures in fives' theory, and organisational ecology on the population level, within the framework of structural contingency theory. It compares the universities' organisational structures, their units and organisation levels, configuration sizes, shapes, dispersal, differentiation, attributes and affiliations with both the historical university models, and the universities as organisational populations of the higher education systems level. International longitudinal series and database data of 106 European universities are used to cover a 50-year study period from 1962 to 2013.

The results demonstrate how the European universities have within the study period differentiated and multiplied many times over, both as institutions and within their internal organisational structures. In the 21 century, the changes have accelerated and their effects have st differentiated, leading to new types of above-faculty layers and organisational reforms. The convergence versus divergence discussion of universities is clarified by parsing the exhibited phenomena to the three organisational levels of higher education: the local higher education institutions (HEIs), the mostly national higher education systems (HESs) and the global higher education network (GHEN). The study results presented in this book can be utilised in designing university reforms and university organisations of the future, by consciously choosing from a greater set of compared structural alternatives.



UNIVERSITY OF HELSINKI
FACULTY OF SOCIAL SCIENCES

ISBN 978-951-51-6321-9



9 789515 163219